

Astron
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METEOROLOGICAL OBSERVATIONS

MADE AT THE

RADCLIFFE OBSERVATORY,

OXFORD,

IN THE YEAR 1857,

UNDER THE SUPERINTENDENCE OF

MANUEL J. JOHNSON, M.A.

RADCLIFFE OBSERVER.

From the 18th Volume of the Radcliffe Observations.

18

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DIRECTION TO THE BINDER.

Illustrations P. I—VII. to follow the Introduction.

ERRATUM, IN THE PRESENT VOLUME.

P. [ix] in the first column of the table *dele* 1857.

ADDITIONAL ERRATA IN VOL. 17 (for 1856.)

| | | | | |
|-----------------------------------|-----|-------------------|------|---------|
| P. [xxxv] line 11 from the bottom | for | S 86° W | read | S 76° W |
| 7 from the bottom | | "almost due West" | | ENE |

METEOROLOGICAL OBSERVATIONS

IN

1857.

INTRODUCTION

TO THE

METEOROLOGICAL OBSERVATIONS.

THE Observations in the following pages have been derived principally from the Photographic Instruments, which were fully described in our 15th and 16th volumes.

The arrangement of the Register is the same as in our last volume; but instead of the measured ordinates, from our Photographic pictures, at the even hours of the day, the indications have been given in terms of the ordinary English scales. Another alteration is, the adoption of the Astronomical day commencing at *Noon*, instead of the Civil day;—this must be borne in mind in comparing the results in the present with those in preceding volumes.

The field of the lenses, with which the several Instruments are provided, did not take in quite the whole range of their variations. In the Barograph, the apex of the mercurial column was sometimes above the field of the lens, though never below it. Before the month of April, the Thermograph and Hygograph were liable to be sometimes above, and sometimes below. This defect has now been corrected in all the Instruments. The omissions, caused by it, have in some cases been substituted by eye-observations; and in a very few instances, the recorded quantities are mere interpolations introduced, when there is reason to presume that the changes have not been irregular. All such substitutions and interpolations have been noted in the foot-notes. Other omissions which occur were occasioned by failure of the picture through blackening of the Photographic composition, or defect of illumination.

Descriptions of the Instruments, and of the general method of treatment, have for the most part been given in former volumes. Any changes or additions, which have been made during the year now under consideration, will be mentioned in the course of this Introduction.

The Photographic processes have been conducted by Mr. George Green, by whom also all the Meteorological Observations were made.

Ronald's Barograph.

No change was made in this Instrument until the end of the year, when its bearing screws were slightly lowered, in order to bring all its variations within the scope of the lens. It continues to act as well as heretofore.

The expression used for reducing the measured ordinates to terms of the ordinary Barometric scale, is the same as that given in our last volume; *viz.*

$$\text{Equivalent} = 30.409 - 0.1406n + .0126 (\beta - 29.73)$$

where n denotes recorded readings of our scale; β , the approximate reading of the Barometer at the time.

The Standard Barometer is read every day at 22^h; and the following table exhibits a comparison of its mean monthly indications with those of the Barograph at the same hour.

| Month. | Barometer at 22 ^h . | Barograph at 22 ^h . | Excess of Barograph. |
|----------------|-----------------------------------|-----------------------------------|-------------------------|
| | inch. | inch. | inch. |
| January | 29.595 | 29.594 | — .001 |
| February | .924 | .919 | — .005 |
| March | .643 | .643 | .000 |
| April | .618 | .609 | + .001 |
| May | .746 | .742 | — .004 |
| June | .805 | .799 | — .006 |
| July | .815 | .806 | — .009 |
| August | .803 | .796 | — .007 |
| September... | .746 | .741 | — .005 |
| October | .654 | .649 | — .005 |
| November ... | .916 | .907 | — .009 |
| December ... | 30.100 | 30.100 | + .002 |
| | 29.780 | 29.776 | — .004 |

The hourly means at the foot of each column of the Register, furnish the following values of a , a' , a'' , &c. in the formula

$$B_x = a + a' \sin(x + A) + a'' \sin(2x + B) + a''' \sin(3x + C)$$

where B_x is the required height of the Barometer at any hour; and x , the hour angle reckoned from Noon.

It is to be remembered, in comparing the following expressions with those in our preceding volumes, that in consequence of commencing the day at Noon, instead of Midnight, the value of A is 180° less.

| Month. | a | a' | a'' | a''' | A | B | C |
|----------------|--------|-------|-------|--------|--------|--------|--------|
| | in. | | | | ° ' " | ° ' " | ° ' " |
| January | 29.589 | .0101 | .0071 | .0041 | 8 32 | 152 14 | 145 0 |
| February | 29.891 | .0131 | .0155 | .0045 | 186 35 | 155 55 | 201 48 |
| March | 29.651 | .0141 | .0120 | .0050 | 334 2 | 117 16 | 91 54 |
| April | 29.581 | .0140 | .0152 | .0030 | 193 7 | 163 9 | 266 49 |
| May | 29.732 | .0109 | .0102 | .0020 | 199 56 | 140 58 | 350 32 |
| June | 29.790 | .0084 | .0099 | .0030 | 187 9 | 139 9 | 6 20 |
| July | 29.792 | .0071 | .0099 | .0036 | 181 13 | 141 40 | 291 48 |
| August | 29.786 | .0047 | .0112 | .0000 | 204 24 | 134 16 | ..... |
| September... | 29.724 | .0014 | .0142 | .0024 | 238 8 | 140 37 | 164 3 |
| October | 29.640 | .0050 | .0119 | .0004 | 260 4 | 161 11 | 159 9 |
| November ... | 29.898 | .0071 | .0099 | .0043 | 320 27 | 152 32 | 177 48 |
| December ... | 30.100 | .0102 | .0116 | .0052 | 206 4 | 172 36 | 188 53 |

From these values we find the hourly excesses over the mean of the day as follows.

| Jan. | Feb. | March. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | | |
|------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | | |
| 0 | +.007 | +.003 | +.010 | -.002 | +.002 | +.006 | +.003 | +.006 | +.008 | -.001 | .000 | -.004 | 0 |
| 1 | +.003 | -.011 | +.007 | -.014 | -.003 | +.001 | -.002 | .000 | .000 | -.007 | -.006 | -.016 | 1 |
| 2 | -.001 | -.021 | +.001 | -.023 | -.010 | -.005 | -.006 | -.006 | -.009 | -.013 | -.011 | -.023 | 2 |
| 3 | -.002 | -.025 | -.005 | -.027 | -.016 | -.012 | -.010 | -.012 | -.015 | -.016 | -.011 | -.024 | 3 |
| 4 | .000 | -.026 | -.007 | -.028 | -.021 | -.018 | -.013 | -.015 | -.016 | -.015 | -.008 | -.020 | 4 |
| 5 | +.005 | -.021 | -.005 | -.024 | -.022 | -.020 | -.015 | -.015 | -.013 | -.011 | -.001 | -.013 | 5 |
| 6 | +.010 | -.015 | +.002 | -.020 | -.019 | -.018 | -.015 | -.012 | -.008 | -.004 | +.005 | -.005 | 6 |
| 7 | +.014 | -.009 | +.011 | -.015 | -.012 | -.012 | -.012 | -.007 | -.001 | +.003 | +.010 | .000 | 7 |
| 8 | +.014 | -.003 | +.019 | -.004 | -.004 | -.003 | -.006 | .000 | +.006 | +.010 | +.013 | +.003 | 8 |
| 9 | +.012 | +.002 | +.022 | +.005 | +.005 | +.005 | +.002 | +.006 | +.010 | +.014 | +.013 | +.004 | 9 |
| 10 | +.008 | +.006 | +.022 | +.011 | +.010 | +.010 | +.008 | +.010 | +.012 | +.015 | +.012 | +.005 | 10 |
| 11 | +.003 | +.009 | +.018 | +.014 | +.012 | +.010 | +.011 | +.012 | +.012 | +.014 | +.011 | +.006 | 11 |
| 12 | -.001 | +.010 | +.012 | +.011 | +.010 | +.007 | +.010 | +.010 | +.009 | +.009 | +.009 | +.007 | 12 |
| 13 | -.004 | +.008 | +.006 | +.007 | +.007 | +.003 | +.005 | +.006 | +.005 | +.003 | +.006 | +.006 | 13 |
| 14 | -.007 | +.003 | .000 | +.002 | +.003 | -.001 | -.001 | +.001 | -.001 | -.003 | .000 | +.005 | 14 |
| 15 | -.010 | -.002 | -.007 | -.002 | .000 | -.003 | -.006 | -.003 | -.008 | -.007 | -.006 | +.001 | 15 |
| 16 | -.014 | -.005 | -.013 | -.001 | .000 | -.002 | -.007 | -.006 | -.012 | -.008 | -.012 | -.001 | 16 |
| 17 | -.017 | -.004 | -.019 | +.005 | +.002 | +.001 | -.004 | -.006 | -.013 | -.007 | -.016 | -.001 | 17 |
| 18 | -.017 | +.003 | -.024 | +.012 | +.006 | +.005 | +.002 | -.004 | -.011 | -.003 | -.014 | +.002 | 18 |
| 19 | -.013 | +.012 | -.024 | +.022 | +.009 | +.008 | +.009 | +.001 | -.004 | +.002 | -.009 | +.009 | 19 |
| 20 | -.007 | +.021 | -.020 | +.025 | +.011 | +.009 | +.013 | +.005 | +.004 | +.006 | -.002 | +.015 | 20 |
| 21 | +.001 | +.026 | -.011 | +.024 | +.011 | +.010 | +.014 | +.010 | +.012 | +.008 | +.004 | +.019 | 21 |
| 22 | +.007 | +.025 | -.002 | +.018 | +.010 | +.010 | +.012 | +.011 | +.016 | +.008 | +.008 | +.016 | 22 |
| 23 | +.009 | +.016 | +.006 | +.009 | +.007 | +.009 | +.018 | +.010 | +.014 | +.004 | +.006 | +.008 | 23 |

Combining the above with the corresponding values in 1855—56 (*R. O. Vol. xvii. p. [vi]*), we have the mean of three years as follows.

HORARY VARIATIONS OF THE BAROMETER FROM THE MEAN OF THE DAY,
FROM THREE YEARS' OBSERVATION.

| Hour. | Jan. | Feb. | March. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Hour. |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | |
| 0 | + .005 | + .006 | + .006 | + .003 | - .004 | + .005 | 0.00 | + .004 | + .006 | .000 | + .001 | + .005 | 0 |
| 1 | .000 | - .004 | - .001 | - .007 | - .008 | + .002 | - .005 | - .002 | - .003 | - .006 | - .006 | - .005 | 1 |
| 2 | - .006 | - .014 | - .009 | - .016 | - .013 | - .004 | - .009 | - .007 | - .011 | - .012 | - .012 | - .014 | 2 |
| 3 | - .007 | - .018 | - .013 | - .020 | - .017 | - .007 | - .012 | - .012 | - .017 | - .014 | - .012 | - .017 | 3 |
| 4 | - .005 | - .019 | - .014 | - .023 | - .018 | - .011 | - .014 | - .014 | - .019 | - .014 | - .009 | - .016 | 4 |
| 5 | + .004 | - .016 | - .011 | - .022 | - .017 | - .013 | - .014 | - .013 | - .018 | - .008 | - .004 | - .013 | 5 |
| 6 | + .005 | - .010 | - .005 | - .019 | - .015 | - .013 | - .013 | - .011 | - .015 | - .001 | + .002 | - .008 | 6 |
| 7 | + .008 | - .004 | + .002 | - .014 | - .009 | - .007 | - .009 | - .006 | - .010 | + .005 | + .007 | - .004 | 7 |
| 8 | + .009 | + .002 | + .010 | - .005 | - .003 | .000 | - .004 | - .001 | - .003 | + .014 | + .009 | - .002 | 8 |
| 9 | + .008 | + .005 | + .013 | + .003 | + .005 | + .007 | + .003 | + .003 | + .002 | + .017 | + .010 | .000 | 9 |
| 10 | + .007 | + .007 | + .015 | + .010 | + .010 | + .012 | + .009 | + .008 | + .007 | + .016 | + .011 | + .002 | 10 |
| 11 | + .005 | + .006 | + .013 | + .013 | + .013 | + .009 | + .011 | + .009 | + .010 | + .011 | + .009 | + .003 | 11 |
| 12 | + .003 | + .005 | + .011 | + .012 | + .013 | + .005 | + .010 | + .008 | + .011 | + .007 | + .008 | + .006 | 12 |
| 13 | + .001 | + .003 | + .007 | + .008 | + .010 | .000 | + .006 | + .005 | + .008 | + .001 | + .004 | + .005 | 13 |
| 14 | - .001 | .000 | + .002 | + .003 | + .006 | - .006 | + .001 | + .001 | + .004 | - .005 | .000 | + .004 | 14 |
| 15 | - .006 | - .003 | - .002 | - .002 | + .003 | - .009 | - .003 | - .002 | .000 | - .008 | - .005 | .000 | 15 |
| 16 | - .011 | - .006 | - .008 | - .004 | + .001 | - .009 | - .006 | - .004 | - .004 | - .009 | - .011 | - .004 | 16 |
| 17 | - .014 | - .005 | - .010 | .000 | + .003 | - .003 | - .003 | - .003 | - .004 | - .008 | - .013 | - .005 | 17 |
| 18 | - .014 | - .002 | - .010 | + .005 | + .004 | + .003 | + .002 | - .001 | - .002 | - .006 | - .011 | - .003 | 18 |
| 19 | - .009 | + .006 | - .008 | + .013 | + .008 | + .006 | + .008 | + .003 | + .003 | - .002 | - .004 | + .004 | 19 |
| 20 | - .002 | + .012 | - .003 | + .018 | + .009 | + .009 | + .010 | + .007 | + .010 | + .003 | + .003 | + .012 | 20 |
| 21 | + .006 | + .017 | + .002 | + .019 | + .008 | + .010 | + .011 | + .010 | + .014 | + .006 | + .007 | + .017 | 21 |
| 22 | + .009 | + .020 | + .007 | + .018 | + .007 | + .009 | + .009 | + .010 | + .016 | + .007 | + .011 | + .019 | 22 |
| 23 | + .009 | + .014 | + .008 | + .011 | + .002 | + .008 | + .008 | + .008 | + .010 | + .005 | + .007 | + .013 | 23 |

The hour of minimum and maximum may be found from the expression,

$$c = a' \cos (x + A) + 2a'' \cos (2x + B) + 3a''' \cos (3x + C).$$

But we have adopted the process of graphic projection, which, by adopting a large scale, has been found sufficiently accurate for the purpose.

The several daily epochs of minimum and maximum in 1857 were as follows:

| Month. | Hours from Noon. | | | |
|----------------|------------------|-------|-------|-------|
| | Min. | Max. | Min. | Max. |
| | h. | h. | h. | h. |
| January | 3.0 | 7.5 | 17.5 | 23.0 |
| February | 3.5 | 12.0 | 16.5 | 21.5 |
| March | 4.0 | 9.5 | 18.5 | 0.0 |
| April | 4.5 | 11.0 | 15.3 | 20.3 |
| May | 4.8 | 11.0 | 15.5 | 20.3 |
| June | 5.0 | 10.5 | 15.3 | 21.5 |
| July | 5.5 | 11.3 | 15.5 | 21.0 |
| August | 4.5 | 11.0 | 16.5 | 22.0 |
| September... | 3.6 | 10.5 | 17.0 | 22.3 |
| October | 3.0 | 10.0 | 16.0 | 21.5 |
| November ... | 2.5 | 9.0 | 17.2 | 22.3 |
| December ... | 2.8 | 12.0 | 16.5 | 21.0 |
| Year..... | 3.90 | 10.44 | 16.44 | 21.72 |
| Winter... | 3.10 | 10.50 | 16.83 | 21.83 |
| Spring ... | 4.43 | 10.50 | 16.43 | 21.53 |
| Summer . | 5.00 | 10.93 | 15.77 | 21.50 |
| Autumn . | 3.03 | 9.83 | 16.73 | 22.03 |

Combining the above with the corresponding epochs in 1855—56 (*R. O. Vol. xvii.* p. [vii]), we have the mean of three years, as follows.

| Month. | Hours from Noon. | | | |
|----------------|------------------|-------|-------|-------|
| | Min. | Max. | Min. | Max. |
| | h. | h. | h. | h. |
| January | 3.0 | 8.0 | 17.4 | 22.3 |
| February | 3.6 | 11.0 | 16.5 | 21.8 |
| March | 3.8 | 10.0 | 17.3 | 22.8 |
| April | 4.6 | 11.3 | 15.8 | 21.0 |
| May | 4.3 | 11.2 | 16.0 | 20.4 |
| June | 5.6 | 10.0 | 15.4 | 21.2 |
| July | 4.5 | 11.0 | 16.0 | 21.0 |
| August | 4.4 | 11.0 | 16.2 | 21.7 |
| September... | 4.3 | 11.3 | 16.6 | 21.8 |
| October | 3.5 | 9.3 | 16.0 | 21.8 |
| November ... | 2.7 | 11.3 | 16.9 | 22.1 |
| December ... | 3.6 | 12.0 | 17.0 | 21.7 |
| Year..... | 3.99 | 10.62 | 16.42 | 21.63 |
| Winter... | 3.40 | 10.33 | 16.97 | 21.93 |
| Spring ... | 4.23 | 10.83 | 16.38 | 21.40 |
| Summer . | 4.83 | 10.67 | 15.87 | 21.30 |
| Autumn . | 3.50 | 10.63 | 16.50 | 21.90 |

The quarterly results given above exhibit very clearly the nearer approach to mid-day of the several epochs, in Winter than in Summer; a circumstance which has been noticed by many writers.

The extent of the oscillations, in 1857, is shown in the following table, where is given: 1° the range between consecutive maxima and minima, beginning with the oscillation between 22^h—4^h; 2° the mean of the oscillations between from 22^h—10^h, and from 10^h—22^h; 3° the mean of all the oscillations in the day.

EXTENT OF THE DAILY OSCILLATIONS OF THE BAROMETER IN 1857.

| Month. | Hours from Noon. | | | | | | |
|----------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------------|
| | Oscillations between | | | | Mean of the Oscillations. | | Mean of all the Oscillations. |
| | 22 ^h —4 ^h | 4 ^h —10 ^h | 10 ^h —16 ^h | 16 ^h —22 ^h | 22 ^h —10 ^h | 10 ^h —22 ^h | |
| 1857. | in. | in. | in. | in. | in. | in. | in. |
| January | .011 | .017 | .032 | .026 | .0140 | .0290 | .0215 |
| February | .053 | .036 | .016 | .033 | .0445 | .0245 | .0345 |
| March | .017 | .029 | .046 | .034 | .0230 | .0400 | .0315 |
| April | .054 | .042 | .017 | .029 | .0480 | .0230 | .0355 |
| May | .033 | .034 | .012 | .011 | .0335 | .0115 | .0225 |
| June | .030 | .031 | .014 | .013 | .0305 | .0135 | .0220 |
| July | .029 | .026 | .018 | .021 | .0275 | .0195 | .0235 |
| August | .027 | .028 | .018 | .017 | .0275 | .0175 | .0225 |
| September... | .032 | .028 | .025 | .029 | .0300 | .0270 | .0285 |
| October | .025 | .031 | .023 | .017 | .0280 | .0200 | .0240 |
| November ... | .021 | .025 | .029 | .025 | .0230 | .0270 | .0250 |
| December ... | .043 | .031 | .008 | .020 | .0370 | .0140 | .0255 |
| Year | .0313 | .0298 | .0215 | .0229 | .0305 | .0222 | .0263 |
| Winter... | .0357 | .0280 | .0187 | .0263 | .0318 | .0225 | .0272 |
| Spring ... | .0347 | .0350 | .0250 | .0247 | .0348 | .0240 | .0294 |
| Summer . | .0287 | .0283 | .0167 | .0170 | .0285 | .0168 | .0223 |
| Autumn . | .0260 | .0280 | .0257 | .0237 | .0270 | .0247 | .0258 |

Combining the above with the corresponding oscillations in 1855-56, we have for the mean of 3 years.

EXTENT OF THE DAILY OSCILLATIONS OF THE BAROMETER, MEAN
OF 3 YEARS.

| Month. | Hours from Noon. | | | | | | |
|----------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------------|
| | Oscillations between | | | | Mean of the Oscillations. | | Mean of all the Oscillations. |
| | 22 ^h —4 ^h | 4 ^h —10 ^h | 10 ^h —16 ^h | 16 ^h —22 ^h | 22 ^h —10 ^h | 10 ^h —22 ^h | |
| 1857. | in. | in. | in. | in. | in. | in. | in. |
| January | .018 | .020 | .028 | .025 | .0190 | .0265 | .0228 |
| February | .035 | .024 | .014 | .025 | .0295 | .0195 | .0245 |
| March | .025 | .031 | .031 | .023 | .0280 | .0270 | .0275 |
| April | .044 | .037 | .017 | .025 | .0405 | .0210 | .0308 |
| May | .029 | .034 | .013 | .008 | .0315 | .0105 | .0210 |
| June | .024 | .027 | .022 | .019 | .0255 | .0205 | .0230 |
| July | .026 | .026 | .017 | .017 | .0260 | .0170 | .0215 |
| August | .024 | .026 | .016 | .014 | .0250 | .0150 | .0200 |
| September... | .035 | .027 | .017 | .020 | .0310 | .0185 | .0248 |
| October | .024 | .030 | .022 | .016 | .0270 | .0190 | .0230 |
| November ... | .023 | .025 | .026 | .025 | .0240 | .0255 | .0248 |
| December ... | .038 | .025 | .011 | .024 | .0315 | .0175 | .0245 |
| Year | .0288 | .0277 | .0195 | .0201 | .0282 | .0198 | .0240 |
| Winter... | .0303 | .0230 | .0177 | .0247 | .0267 | .0212 | .0240 |
| Spring ... | .0327 | .0340 | .0203 | .0187 | .0334 | .0195 | .0265 |
| Summer. | .0247 | .0263 | .0183 | .0167 | .0255 | .0175 | .0215 |
| Autumn . | .0273 | .0273 | .0217 | .0203 | .0273 | .0210 | .0242 |

Comparing together the quarterly results, at the foot of this table, it will be perceived, that the oscillations from 22^h—10^h are the greatest throughout the year.

The elasticity of vapour deduced from the 2d edition of Mr. Glaisher's *Hygrometrical Tables*, with the corresponding observations of the Thermograph and Hygograph, are,

| Month. | Hours from Noon. | | | | | | | | | | | |
|-----------------|------------------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 |
| January | .224 | .223 | .219 | .204 | .202 | .202 | .204 | .207 | .201 | .193 | .195 | .202 |
| February | .228 | .231 | .231 | .227 | .224 | .215 | .209 | .199 | .193 | .188 | .199 | .217 |
| March | .248 | .249 | .257 | .256 | .247 | .246 | .249 | .244 | .238 | .234 | .248 | .259 |
| April | .244 | .246 | .252 | .250 | .242 | .246 | .239 | .238 | .236 | .233 | .241 | .247 |
| May | .316 | .325 | .328 | .318 | .305 | .297 | .288 | .276 | .277 | .290 | .311 | .327 |
| June | .403 | .399 | .401 | .404 | .401 | .391 | .382 | .371 | .367 | .378 | .399 | .406 |
| July | .401 | .403 | .406 | .416 | .412 | .410 | .403 | .399 | .401 | .410 | .416 | .413 |
| August | .470 | .465 | .470 | .467 | .479 | .462 | .469 | .464 | .453 | .451 | .453 | .473 |
| September | .427 | .421 | .416 | .419 | .413 | .406 | .407 | .404 | .396 | .386 | .400 | .422 |
| October | .366 | .367 | .365 | .360 | .356 | .339 | .335 | .331 | .330 | .334 | .336 | .357 |
| November | .296 | .303 | .301 | .289 | .281 | .276 | .272 | .266 | .265 | .269 | .277 | .286 |
| December | .281 | .281 | .279 | .281 | .277 | .271 | .267 | .265 | .264 | .262 | .267 | .274 |
| Mean | 3253 | 3261 | 3271 | 3243 | 3199 | 3134 | 3103 | 3053 | 3018 | 3023 | 3118 | 3236 |

The mean values are very nearly represented by the expression,
 $V_x = 0.316 + .0128 \sin(x + 41^\circ 53') + .0019 \sin(2x + 121^\circ 58') + .0020 \sin(3x + 189^\circ 28')$

Subtracting these quantities from the corresponding Atmospheric Pressures, we obtain the following table of the Pressure of Dry Air.

| Month. | Hours from Noon. | | | | | | | | | | | |
|-------------|------------------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| January ... | 29.372 | .365 | .370 | .395 | .401 | .395 | .384 | .375 | .374 | .379 | .387 | .394 |
| February .. | .666 | .639 | .634 | .649 | .664 | .682 | .692 | .700 | .693 | .706 | .713 | .699 |
| March | .413 | .403 | .357 | .397 | .423 | .427 | .414 | .413 | .400 | .393 | .383 | .390 |
| April | .334 | .312 | .301 | .310 | .335 | .346 | .353 | .345 | .344 | .360 | .365 | .352 |
| May | .418 | .397 | .383 | .395 | .423 | .445 | .454 | .459 | .455 | .448 | .432 | .415 |
| June | .393 | .386 | .371 | .368 | .386 | .409 | .415 | .418 | .421 | .417 | .401 | .394 |
| July | .394 | .383 | .373 | .361 | .374 | .390 | .399 | .392 | .384 | .384 | .389 | .391 |
| August | .322 | .315 | .301 | .307 | .307 | .334 | .327 | .323 | .327 | .331 | .338 | .324 |
| September | .305 | .294 | .292 | .297 | .317 | .330 | .326 | .319 | .316 | .327 | .328 | .318 |
| October ... | .273 | .260 | .260 | .276 | .294 | .316 | .314 | .306 | .302 | .303 | .310 | .291 |
| November | .602 | .584 | .589 | .614 | .630 | .634 | .635 | .632 | .621 | .615 | .619 | .620 |
| December | .815 | .796 | .801 | .814 | .826 | .834 | .840 | .840 | .837 | .840 | .848 | .842 |
| Mean | 29.442 | .428 | .419 | .432 | .448 | .462 | .463 | .460 | .456 | .459 | .459 | .453 |

The mean of all the bi-horary results during the year, is nearly represented by the expression,

$$B_n = 29.4484 + 0.0171 \sin(x + 223.16^\circ) + 0.0093 \sin(2x + 154.30^\circ)$$

The term involving $3x$ is insensible.

The bi-horary values resulting from the above expression, are as follows,

| | in. |
|----------|---------|
| Noon 0 = | 29.4409 |
| 2 = | .4266 |
| 4 = | .4222 |
| 6 = | .4318 |
| 8 = | .4489 |
| 10 = | .4618 |
| 12 = | .4642 |
| 14 = | .4594 |
| 16 = | .4556 |
| 18 = | .4568 |
| 20 = | .4587 |
| 22 = | .4540 |

The cistern of the Barograph is about 210 feet above the sea-level; which gives the reduction of its indications to that plane = + 0.231 inch.

Thermograph and Hygograph.

During the months of January, February, and March, the same instruments were used as in preceding years. But they were defective, inasmuch as they failed to mark very high or very low temperatures, such indications exceeding the field of the lenses. It was also difficult to arrange the illumination, so that it might be diffused over the whole field.

I was therefore induced to attempt another construction, and for this I chose the ingenious principle of the divided column, which has been very successfully adopted by Professor Phillips in his self-registering Thermometer.

After the Thermometer tubes have been filled with the proper quantity of mercury, a little air is admitted and another column is added about 4 inches in length, (the width of our paper.) In consequence of the admitted air, this latter column does not unite with the main column, but a small interstice is left between them, through which light passes.

The two Instruments are placed side by side, about $\frac{1}{2}$ an inch from each other on a brass frame, having a long narrow opening large enough to expose the columns of mercury, and at the same time shutting out as much as possible the diffused light through the solid part of the tubes.

This frame is made to slide, between grooves, on another brass frame, with its central part cut away, which is screwed to the back of the Camera. The gas-flame and the condenser are placed behind the instrument thus fixed, and the light passing through the small interstices between the columns of mercury, produces on the paper the impression of two lines, which represent the indications of the respective instruments. But as they are half an inch apart, these indications would not appear coincident in respect to time. In order to make them so, the image of the line of the Hygrograph is received, before it reaches the paper, on a reflector, which deflects it into the required position. The zeros from which the indications are measured, are two or three small holes perforated in the carrying frame of the Thermometers, in the interval between them. The light passing through these holes produces the impression of two straight lines on the paper. Two such zeros are sufficient, one at about 30° , the other at about 60° .

One advantage of this construction is, that by sliding the Thermometers up or down, any part of them may be brought within the field of the lens. Thus by setting the instrument so that the lens in Winter may take in the range from about 15° to 60° , and in Summer from 45° to 90° , it is seldom that we lose any of the indications of the instrument; and even when there is any chance of this being the case, the position of the instrument may be altered in a few minutes, without any further injury to the current record than breaking the continuity of the several lines at the spot where the alteration was made, which for the purposes of measurement is of no consequence.

Another great advantage is, that we obtain the indications of both instruments on the same paper.

The disadvantages are,

- 1°. In sudden large variations of temperature we are liable to lose the intermediate marking between the highest and lowest indication. This, however, is not often the case.

- 2°. There is some difficulty in adjusting the reflector for deflecting the image of the Hygrograph, so that it may reflect equally throughout the range of the field of the lens. Most of the failures, which will be perceived in the daily records, are due to this circumstance.

The scale and the position of the zeros were determined by comparing the measured ordinates with the contemporary indications of the Standard Dry and Wet Thermometers, in the manner described in our 15th Volume, (p. [xxxii]).

Observations of the Standards are made daily at 10^h and 22^h; and the difference between their indications and those of the Thermograph and Hygrograph at the same hours, are given at the bottom of each page, as corrections to be applied to the latter instruments.

Indications of the Thermograph.

The two-hourly indications of the Thermograph furnish the following values in the formula

$$T_x = a + a' \sin (x + A) + \&c.$$

| Month. | <i>a</i> | <i>a'</i> | <i>a''</i> | <i>a'''</i> | A | B | C |
|---------------|----------|-----------|------------|-------------|-------|--------|--------|
| | ° | ° | ° | ° | ° / | ° / | ° / |
| January | 37.4 | 1.55 | 0.98 | 0.35 | 43 55 | 37 35 | 19 18 |
| February..... | 40.7 | 3.86 | 1.46 | 0.35 | 39 16 | 27 27 | 2 44 |
| March..... | 42.2 | 3.60 | 1.00 | 0.23 | 44 42 | 46 1 | 162 4 |
| April | 45.5 | 5.77 | 0.98 | 0.41 | 49 27 | 58 2 | 201 22 |
| May | 52.5 | 7.66 | 0.45 | 0.81 | 47 7 | 113 25 | 204 26 |
| June | 61.0 | 8.45 | 0.22 | 0.29 | 52 54 | 122 6 | 281 0 |
| July | 62.8 | 6.88 | 0.33 | 0.44 | 52 48 | 45 0 | 226 33 |
| August | 63.6 | 7.50 | 1.34 | 0.28 | 49 12 | 53 35 | 197 22 |
| September ... | 58.3 | 5.51 | 1.34 | 0.18 | 51 7 | 45 36 | 174 48 |
| October | 52.4 | 3.82 | 1.24 | 0.20 | 51 0 | 45 0 | 125 0 |
| November.... | 45.5 | 2.76 | 0.99 | 0.53 | 56 0 | 44 27 | 48 49 |
| December | 45.3 | 1.99 | 0.94 | 0.47 | 44 50 | 49 40 | 47 52 |

From these expressions we obtain the following horary excesses from the mean temperature of the day.

| Hour. | Jan. | Feb. | Mch. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Hour. |
|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0 | + 1.8 | + 3.1 | + 3.2 | + 5.1 | + 5.7 | + 6.7 | + 5.4 | + 6.8 | + 5.3 | + 4.0 | + 3.4 | + 2.5 | 0 |
| 1 | 2.6 | 4.6 | 3.9 | 5.8 | 6.3 | 7.8 | 6.3 | 7.8 | 6.2 | 4.7 | 4.1 | 3.1 | 1 |
| 2 | 2.8 | 5.4 | 4.2 | 6.2 | 6.8 | 8.3 | 6.8 | 8.3 | 6.6 | 4.8 | 4.1 | 3.1 | 2 |
| 3 | 2.5 | 5.4 | 4.1 | 6.1 | 7.2 | 8.5 | 7.1 | 8.1 | 6.3 | 4.5 | 3.4 | 2.5 | 3 |
| 4 | 1.8 | 4.6 | 3.7 | 5.6 | 7.3 | 7.9 | 6.8 | 7.3 | 5.5 | 3.7 | 2.3 | 1.7 | 4 |
| 5 | 0.9 | 3.3 | 3.0 | 4.7 | 6.8 | 6.6 | 5.8 | 5.9 | 4.2 | 2.7 | 1.3 | 0.8 | 5 |
| 6 | + 0.2 | 2.0 | 2.2 | 3.3 | 5.5 | 4.9 | 4.2 | 4.1 | 2.7 | 1.7 | + 0.5 | 0.4 | 6 |
| 7 | - 0.3 | + 0.8 | 1.2 | 1.7 | 3.6 | 2.8 | 2.3 | 2.1 | + 1.0 | + 0.6 | 0.0 | + 0.2 | 7 |
| 8 | 0.4 | - 0.1 | + 0.2 | 0.0 | + 1.3 | + 0.8 | + 0.2 | + 0.1 | - 0.4 | - 0.4 | - 0.4 | 0.0 | 8 |
| 9 | 0.4 | 0.7 | - 0.4 | - 1.3 | - 0.8 | - 1.2 | - 1.6 | - 1.6 | 1.7 | 1.2 | 0.7 | - 0.1 | 9 |
| 10 | 0.5 | 1.0 | 0.8 | 2.3 | 2.6 | 3.1 | 3.1 | 2.9 | 2.4 | 1.6 | 1.1 | 0.4 | 10 |
| 11 | 0.5 | 1.4 | 1.2 | 3.0 | 3.9 | 4.7 | 4.1 | 3.8 | 3.0 | 2.1 | 1.6 | 0.8 | 11 |
| 12 | 0.6 | 1.8 | 1.8 | 3.4 | 4.9 | 6.3 | 4.9 | 4.5 | 3.3 | 2.3 | 2.0 | 1.0 | 12 |
| 13 | 0.7 | 2.2 | 2.0 | 4.0 | 5.7 | 7.6 | 5.6 | 5.2 | 3.6 | 2.3 | 2.2 | 1.3 | 13 |
| 14 | 0.8 | 2.5 | 2.3 | 4.4 | 6.7 | 8.4 | 6.2 | 5.9 | 4.0 | 2.4 | 2.1 | 1.3 | 14 |
| 15 | 0.9 | 2.8 | 2.7 | 5.1 | 7.6 | 8.7 | 6.6 | 6.6 | 4.4 | 2.7 | 2.0 | 1.3 | 15 |
| 16 | 1.0 | 3.0 | 3.2 | 5.6 | 8.0 | 8.3 | 6.6 | 7.0 | 4.8 | 3.1 | 1.9 | 1.4 | 16 |
| 17 | 1.2 | 3.2 | 3.6 | 5.6 | 7.7 | 7.0 | 5.9 | 7.0 | 4.9 | 3.4 | 1.9 | 1.6 | 17 |
| 18 | 1.4 | 3.3 | 3.6 | 5.0 | 6.3 | 5.2 | 4.7 | 6.2 | 4.6 | 3.5 | 1.8 | 1.8 | 18 |
| 19 | 1.6 | 3.2 | 3.1 | 3.6 | 4.1 | 3.0 | 2.9 | 4.7 | 3.7 | 3.0 | 1.8 | 1.8 | 19 |
| 20 | 1.5 | 2.9 | 2.1 | - 1.7 | - 1.4 | - 0.8 | - 0.9 | - 2.4 | 2.2 | 2.0 | 1.6 | 1.8 | 20 |
| 21 | 1.1 | 2.0 | - 0.8 | + 0.3 | + 1.2 | + 1.4 | + 1.1 | 0.0 | - 0.2 | - 0.5 | - 0.7 | - 1.1 | 21 |
| 22 | - 0.4 | - 0.5 | + 0.3 | 2.3 | 3.3 | 3.4 | 2.9 | + 2.6 | + 1.8 | + 1.0 | + 0.6 | 0.0 | 22 |
| 23 | + 0.7 | + 1.2 | + 1.7 | + 3.9 | + 4.7 | + 5.2 | + 4.3 | + 4.8 | + 3.7 | + 2.8 | + 2.1 | + 1.4 | 23 |

Combining the above, with the corresponding values obtained in 1855—56, (*R. O. Vol. xvii. p. [xiii]*), we have,

HORARY VARIATIONS OF THE THERMOMETER FROM THE MEAN OF THE DAY,
FROM THREE YEARS' OBSERVATION.

| Hour. | Jan. | Feb. | Mch. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Hour. |
|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0 | + 1.9 | + 3.0 | + 3.6 | + 5.8 | + 5.4 | + 5.9 | + 5.3 | + 5.9 | + 6.0 | + 4.0 | + 3.1 | + 2.0 | 0 |
| 1 | 2.9 | 4.0 | 5.0 | 6.5 | 6.0 | 6.8 | 6.2 | 6.8 | 6.7 | 4.7 | 3.8 | 2.4 | 1 |
| 2 | 3.1 | 4.4 | 5.5 | 6.9 | 6.5 | 7.4 | 6.8 | 7.6 | 6.9 | 5.0 | 3.9 | 2.6 | 2 |
| 3 | 2.6 | 4.3 | 5.4 | 6.6 | 6.7 | 7.6 | 7.1 | 7.6 | 6.5 | 4.6 | 3.1 | 2.0 | 3 |
| 4 | 2.1 | 3.6 | 4.9 | 6.1 | 6.6 | 7.5 | 6.9 | 7.3 | 5.7 | 3.8 | 2.2 | 1.5 | 4 |
| 5 | 1.1 | 2.7 | 3.8 | 4.9 | 5.9 | 6.5 | 5.9 | 6.1 | 4.5 | 2.6 | 1.2 | 0.9 | 5 |
| 6 | + 0.4 | 1.7 | 2.7 | 3.6 | 4.6 | 5.0 | 4.7 | 4.6 | 3.0 | 1.4 | + 0.2 | 0.3 | 6 |
| 7 | - 0.2 | + 0.7 | 1.5 | 2.0 | 2.8 | 2.9 | 2.6 | 2.2 | + 1.3 | + 0.5 | - 0.6 | + 0.1 | 7 |
| 8 | 0.4 | 0.0 | + 0.2 | + 0.1 | + 1.0 | + 0.9 | + 0.5 | + 0.6 | - 0.3 | - 0.8 | 1.0 | - 0.1 | 8 |
| 9 | 0.6 | - 0.7 | - 0.6 | - 1.1 | - 0.8 | - 1.0 | - 1.3 | - 1.2 | 1.6 | 1.5 | 1.2 | 0.2 | 9 |
| 10 | 0.7 | 1.2 | 1.3 | 2.4 | 2.3 | 2.8 | 3.0 | 2.6 | 2.7 | 1.8 | 1.4 | 0.3 | 10 |
| 11 | 0.7 | 1.5 | 1.9 | 3.2 | 3.6 | 4.2 | 4.0 | 3.5 | 3.1 | 2.2 | 1.4 | 0.5 | 11 |
| 12 | 0.8 | 1.7 | 2.4 | 3.7 | 4.6 | 5.5 | 4.8 | 4.2 | 3.5 | 2.3 | 1.5 | 0.8 | 12 |
| 13 | 0.8 | 2.0 | 2.8 | 4.3 | 5.6 | 6.5 | 5.5 | 5.1 | 3.8 | 2.4 | 1.6 | 0.8 | 13 |
| 14 | 0.9 | 2.2 | 3.2 | 4.9 | 6.5 | 7.5 | 6.1 | 5.8 | 4.0 | 2.6 | 1.7 | 0.9 | 14 |
| 15 | 1.0 | 2.3 | 3.7 | 5.5 | 7.0 | 7.8 | 6.5 | 6.5 | 4.5 | 2.8 | 1.7 | 0.9 | 15 |
| 16 | 1.1 | 2.5 | 4.3 | 6.1 | 7.2 | 7.8 | 6.6 | 7.1 | 4.9 | 3.0 | 1.8 | 0.9 | 16 |
| 17 | 1.2 | 2.7 | 4.5 | 6.0 | 6.6 | 6.8 | 5.9 | 7.0 | 4.9 | 3.1 | 1.9 | 1.1 | 17 |
| 18 | 1.5 | 2.8 | 4.3 | 5.3 | 5.4 | 5.1 | 4.8 | 6.3 | 4.7 | 3.1 | 1.9 | 1.3 | 18 |
| 19 | 1.6 | 2.6 | 3.6 | 3.6 | 3.4 | 3.0 | 3.0 | 4.4 | 3.8 | 2.7 | 1.9 | 1.4 | 19 |
| 20 | 1.6 | 2.2 | 2.5 | - 1.8 | - 1.1 | - 0.7 | - 1.0 | - 2.3 | - 2.2 | 1.8 | 1.7 | 1.5 | 20 |
| 21 | 1.0 | - 1.1 | - 0.8 | + 0.5 | + 1.1 | + 1.2 | + 0.9 | + 0.1 | + 0.1 | - 0.4 | - 0.7 | 1.0 | 21 |
| 22 | - 0.3 | + 0.2 | + 0.6 | 2.7 | 3.0 | 3.1 | 2.8 | 2.5 | 2.2 | + 1.0 | + 0.5 | - 0.1 | 22 |
| 23 | + 0.9 | + 1.5 | + 2.4 | + 4.3 | + 4.5 | + 4.7 | + 4.0 | + 4.3 | + 4.2 | + 2.6 | + 1.9 | + 1.1 | 23 |

The hours of maximum, minimum, and mean temperature in each month, are as follows.

| | Hours from Noon. | | | |
|---------------|------------------|------|-------|------|
| | Max. | Min. | Mean. | |
| | h. | h. | h. | h. |
| January | 1.8 | 19.5 | 6.3 | 22.4 |
| February..... | 2.5 | 18.0 | 7.8 | 22.4 |
| March..... | 2.0 | 17.5 | 8.4 | 21.8 |
| April | 2.2 | 16.5 | 8.0 | 20.8 |
| May | 4.0 | 16.0 | 8.6 | 19.8 |
| June | 3.0 | 15.0 | 8.4 | 20.4 |
| July | 3.0 | 15.5 | 8.1 | 20.4 |
| August | 2.2 | 16.5 | 8.4 | 21.0 |
| September ... | 2.0 | 16.8 | 7.6 | 21.2 |
| October | 1.9 | 17.8 | 7.6 | 21.3 |
| November ... | 1.5 | 13.5 | 6.8 | 21.5 |
| December | 1.5 | 19.0 | 8.0 | 22.0 |
| Year..... | 2.3 | 16.8 | 7.9 | 21.3 |
| Winter... | 1.9 | 18.8 | 7.6 | 22.3 |
| Spring ... | 2.7 | 16.7 | 8.3 | 20.8 |
| Summer . | 2.7 | 15.7 | 8.3 | 20.6 |
| Autumn . | 1.8 | 16.0 | 7.3 | 21.3 |

Combining the above with the corresponding values in 1855—56 (*R. O. Vol. xvi. p. [xxi]*), the result of 3 years' observation is as follows.

| | Hours from Noon. | | | |
|---------------|------------------|------|-------|------|
| | Max. | Min. | Mean. | |
| | h. | h. | h. | h. |
| January | 1.8 | 19.2 | 6.5 | 22.2 |
| February..... | 2.5 | 18.0 | 8.0 | 21.8 |
| March..... | 2.1 | 17.0 | 8.3 | 21.6 |
| April | 2.0 | 16.4 | 8.0 | 20.8 |
| May | 3.0 | 16.0 | 8.6 | 19.6 |
| June | 3.2 | 15.2 | 8.4 | 20.4 |
| July | 3.0 | 15.5 | 8.3 | 20.5 |
| August | 2.5 | 16.5 | 8.4 | 21.0 |
| September ... | 2.0 | 16.8 | 7.8 | 21.2 |
| October | 2.0 | 17.5 | 7.4 | 21.3 |
| November.... | 1.6 | 18.5 | 6.2 | 21.5 |
| December | 2.0 | 20.0 | 8.0 | 22.0 |
| Year..... | 2.3 | 17.2 | 7.8 | 21.2 |
| Winter... | 2.2 | 19.1 | 7.5 | 22.0 |
| Spring ... | 2.7 | 16.5 | 8.3 | 20.7 |
| Summer . | 3.1 | 15.6 | 8.4 | 20.6 |
| Autumn.. | 1.9 | 17.6 | 7.1 | 21.3 |

Indications of the Hygrograph.

The values of $a, a', a'',$ &c. in the expression, $\Pi_r = a + a' \sin(x + \Lambda)$ &c. are as follows.

| Month. | a | a' | a'' | a''' | Λ | B | C |
|---------------|------|------|-------|--------|-----------|--------|--------|
| | ° | ° | ° | ° | ° | ° | ° |
| January | 36.5 | 1.31 | 0.99 | 0.28 | 46 45 | 46 5 | 45 0 |
| February..... | 38.7 | 3.08 | 0.92 | 0.11 | 34 17 | 42 40 | 45 0 |
| March..... | 41.6 | 2.18 | 0.37 | 0.31 | 44 45 | 64 21 | 216 15 |
| April..... | 42.8 | 3.26 | 0.13 | 0.33 | 47 41 | 57 49 | 203 58 |
| May..... | 48.8 | 4.54 | 0.40 | 0.38 | 48 46 | 155 15 | 235 37 |
| June..... | 56.2 | 4.26 | 0.47 | 0.18 | 52 29 | 169 46 | 248 12 |
| July..... | 57.6 | 3.01 | 0.24 | 0.28 | 52 31 | 205 56 | 225 0 |
| August | 59.9 | 3.45 | 0.63 | 0.28 | 48 20 | 79 26 | 205 1 |
| September... | 55.7 | 2.98 | 0.74 | 0.29 | 48 25 | 62 30 | 166 45 |
| October | 50.7 | 2.58 | 0.66 | 0.19 | 49 22 | 49 21 | 135 0 |
| November ... | 44.5 | 2.18 | 0.63 | 0.27 | 53 47 | 43 11 | 37 34 |
| December.... | 44.0 | 1.47 | 0.54 | 0.30 | 42 36 | 52 2 | 70 33 |

From these expressions are deduced the following hourly deviations from the mean of the day.

| Hr. | Jan. | Feb. | Mch. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Hr. |
|-----|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | |
| 0 | + 1.9 | + 2.4 | + 1.7 | + 2.7 | + 3.2 | + 3.3 | + 2.1 | + 3.1 | + 3.0 | + 2.6 | + 2.4 | + 1.7 | 0 |
| 1 | 2.4 | 3.3 | 1.9 | 3.1 | 3.6 | 3.6 | 2.3 | 3.4 | 3.2 | 3.0 | 2.9 | 2.0 | 1 |
| 2 | 2.4 | 3.7 | 2.2 | 3.3 | 4.0 | 3.8 | 2.6 | 3.5 | 3.3 | 3.0 | 3.0 | 2.0 | 2 |
| 3 | 2.0 | 3.7 | 2.4 | 3.4 | 4.3 | 3.8 | 2.8 | 3.5 | 3.1 | 2.8 | 2.6 | 1.7 | 3 |
| 4 | 1.3 | 3.3 | 2.3 | 3.3 | 4.2 | 3.7 | 2.7 | 3.3 | 2.7 | 2.4 | 2.0 | 1.2 | 4 |
| 5 | + 0.6 | 2.6 | 2.0 | 2.8 | 3.9 | 3.2 | 2.7 | 2.6 | 2.2 | 1.9 | 1.3 | 0.8 | 5 |
| 6 | 0.0 | 1.8 | 1.5 | 2.1 | 3.1 | 2.6 | 2.1 | 1.9 | 1.6 | 1.3 | + 0.6 | 0.6 | 6 |
| 7 | - 0.3 | 1.1 | + 0.8 | 1.2 | 2.0 | 1.7 | 1.3 | 1.0 | + 0.6 | 0.7 | 0.0 | 0.4 | 7 |
| 8 | 0.4 | + 0.5 | 0.0 | + 0.1 | + 0.8 | + 0.8 | + 0.4 | + 0.6 | 0.0 | + 0.1 | - 0.2 | + 0.2 | 8 |
| 9 | 0.4 | 0.0 | - 0.4 | - 0.8 | - 0.3 | - 0.2 | - 0.5 | - 0.4 | - 0.7 | - 0.6 | 0.5 | 0.0 | 9 |
| 10 | 0.4 | - 0.4 | 0.6 | 1.4 | 1.2 | 1.3 | 1.2 | 1.3 | 1.2 | 1.1 | 0.8 | - 0.3 | 10 |
| 11 | 0.4 | 0.8 | 0.7 | 1.7 | 2.1 | 2.2 | 1.8 | 1.5 | 1.5 | 1.4 | 1.2 | 0.6 | 11 |
| 12 | 0.4 | 1.2 | 1.0 | 1.9 | 2.9 | 3.1 | 2.3 | 1.8 | 1.6 | 1.6 | 1.5 | 0.8 | 12 |
| 13 | 0.4 | 1.6 | 1.2 | 2.1 | 3.7 | 3.6 | 2.7 | 2.2 | 1.8 | 1.7 | 1.7 | 1.0 | 13 |
| 14 | 0.5 | 2.0 | 1.5 | 2.4 | 4.5 | 4.5 | 3.0 | 2.6 | 2.0 | 1.8 | 1.8 | 1.0 | 14 |
| 15 | 0.6 | 2.4 | 2.1 | 2.9 | 5.0 | 4.8 | 3.2 | 3.2 | 2.3 | 2.0 | 1.8 | 1.0 | 15 |
| 16 | 0.8 | 2.7 | 2.3 | 3.2 | 5.0 | 4.6 | 3.1 | 3.5 | 2.7 | 2.2 | 1.7 | 1.1 | 16 |
| 17 | 1.1 | 3.0 | 2.4 | 3.3 | 4.5 | 3.8 | 2.7 | 3.5 | 3.0 | 2.4 | 1.6 | 1.4 | 17 |
| 18 | 1.4 | 3.1 | 2.2 | 3.0 | 3.4 | 2.7 | 1.9 | 3.2 | 2.9 | 2.3 | 1.5 | 1.4 | 18 |
| 19 | 1.6 | 2.9 | 1.5 | 2.2 | 2.1 | - 1.4 | - 1.0 | 2.2 | 2.3 | 2.0 | 1.4 | 1.5 | 19 |
| 20 | 1.4 | 2.3 | - 0.6 | - 1.1 | - 0.4 | 0.0 | 0.0 | - 1.4 | - 1.3 | 1.4 | 1.0 | 1.2 | 20 |
| 21 | 0.9 | 1.4 | + 0.1 | + 0.2 | + 1.1 | + 1.2 | + 0.9 | + 0.3 | 0.0 | - 0.2 | - 0.4 | - 0.7 | 21 |
| 22 | - 0.4 | - 0.1 | 0.6 | 1.3 | 2.0 | 2.1 | 1.5 | 1.5 | + 1.3 | + 0.9 | + 0.5 | + 0.2 | 22 |
| 23 | + 1.0 | + 1.2 | + 1.1 | + 2.1 | + 2.7 | + 2.8 | + 1.9 | + 2.5 | + 2.3 | + 1.8 | + 1.5 | + 1.0 | 23 |

Combining the above with the corresponding values in 1855-56 (*R. O. Vol. xvii. p. [xvi]*), we obtain the following table.

HORARY VARIATIONS OF THE HYGROGRAPH FROM THE MEAN OF THE DAY,
FROM THREE YEARS' OBSERVATION.

| Hour. | Jan. | Feb. | Mch. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Hour. |
|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0 | + 1.6 | + 2.2 | + 2.4 | + 3.0 | + 2.9 | + 2.8 | + 2.2 | + 2.8 | + 3.0 | + 2.8 | + 2.1 | + 1.2 | 0 |
| 1 | 2.0 | 2.8 | 2.8 | 3.4 | 3.2 | 3.2 | 2.6 | 3.1 | 3.3 | 2.9 | 2.6 | 1.9 | 1 |
| 2 | 2.2 | 3.1 | 3.3 | 3.6 | 3.6 | 3.5 | 2.9 | 3.3 | 3.4 | 3.0 | 2.7 | 2.0 | 2 |
| 3 | 1.9 | 3.0 | 3.0 | 3.6 | 3.6 | 3.7 | 3.1 | 3.3 | 3.4 | 2.8 | 2.3 | 1.8 | 3 |
| 4 | 1.6 | 2.6 | 2.8 | 3.5 | 3.5 | 3.5 | 3.2 | 3.2 | 3.1 | 2.3 | 1.8 | 1.3 | 4 |
| 5 | 1.0 | 2.0 | 2.1 | 2.9 | 3.2 | 3.1 | 3.0 | 2.8 | 2.5 | 1.8 | 1.1 | 0.9 | 5 |
| 6 | + 0.5 | 1.4 | 1.3 | 2.4 | 2.5 | 2.5 | 2.4 | 2.2 | 1.9 | 1.1 | + 0.3 | 0.3 | 6 |
| 7 | 0.0 | 0.8 | + 0.5 | 1.3 | 1.7 | 1.6 | 1.6 | 1.3 | 0.9 | + 0.4 | - 0.1 | + 0.1 | 7 |
| 8 | - 0.4 | + 0.3 | - 0.2 | + 0.4 | + 0.7 | + 0.6 | + 0.7 | + 0.7 | + 0.1 | - 0.4 | 0.5 | - 0.1 | 8 |
| 9 | 0.5 | - 0.1 | 0.6 | - 0.5 | - 0.3 | - 0.2 | - 0.5 | - 0.3 | - 0.6 | 0.8 | 0.7 | 0.1 | 9 |
| 10 | 0.6 | 0.6 | 0.9 | 1.3 | 1.2 | 1.2 | 1.3 | 1.0 | 1.2 | 1.4 | 0.9 | 0.2 | 10 |
| 11 | 0.6 | 0.9 | 1.2 | 2.0 | 2.0 | 2.1 | 1.9 | 1.5 | 1.5 | 1.5 | 1.1 | 0.4 | 11 |
| 12 | 0.6 | 1.2 | 1.4 | 2.3 | 2.8 | 2.8 | 2.5 | 1.9 | 1.8 | 1.7 | 1.1 | 0.6 | 12 |
| 13 | 0.6 | 1.5 | 1.7 | 2.6 | 3.5 | 3.3 | 2.9 | 2.3 | 2.1 | 1.8 | 1.2 | 0.7 | 13 |
| 14 | 0.6 | 1.7 | 2.0 | 3.0 | 4.2 | 4.0 | 3.3 | 3.0 | 2.4 | 1.9 | 1.3 | 0.7 | 14 |
| 15 | 0.7 | 1.9 | 2.4 | 3.3 | 4.5 | 4.2 | 3.4 | 3.5 | 2.8 | 2.1 | 1.4 | 0.8 | 15 |
| 16 | 0.8 | 2.0 | 2.6 | 3.5 | 4.5 | 4.1 | 3.4 | 3.8 | 3.2 | 2.3 | 1.5 | 0.8 | 16 |
| 17 | 1.2 | 2.2 | 2.6 | 3.4 | 3.8 | 3.4 | 3.2 | 3.5 | 3.2 | 2.4 | 1.5 | 1.0 | 17 |
| 18 | 1.4 | 2.2 | 2.4 | 3.0 | 2.9 | 2.6 | 2.3 | 3.1 | 3.0 | 2.2 | 1.5 | 1.1 | 18 |
| 19 | 1.4 | 2.0 | 1.7 | 2.0 | 1.8 | 1.5 | 1.5 | 2.3 | 2.1 | 1.7 | 1.4 | 1.2 | 19 |
| 20 | 1.3 | 1.6 | 1.0 | - 1.0 | - 0.4 | - 0.3 | - 0.4 | - 1.1 | - 1.1 | - 1.0 | 1.1 | 1.2 | 20 |
| 21 | 0.8 | - 0.2 | - 0.1 | + 0.3 | + 0.9 | + 0.8 | + 0.6 | + 0.3 | + 0.2 | + 0.1 | - 0.4 | 0.9 | 21 |
| 22 | - 0.2 | + 0.4 | + 0.7 | 1.4 | 1.8 | 1.7 | 1.2 | 1.4 | 1.4 | 1.2 | + 0.4 | - 0.1 | 22 |
| 23 | + 0.8 | + 1.3 | + 1.6 | + 2.3 | + 2.5 | + 2.3 | + 1.8 | + 2.3 | + 2.3 | + 1.9 | + 1.3 | + 0.8 | 23 |

The Anemograph.

This Instrument, designed and constructed by Mr. P. Adie of the Strand, London, was fully described in our last volume, (*R. O. Vol. xvii. pp. [xvii.] &c.*)

Direction of the Wind.

The notation adopted in the Register, is in terms of the scale used for measuring the perpendicular distance between the Zero of the Photographic paper, and the indications marked upon it by the index of the wind vane. The unit of this scale is $\frac{1}{4}$ of an inch.

The requisite computations are much facilitated by this arrangement; but, in order that there may be no difficulty in referring the numbers to the ordinary notation, the equivalents, on that notation, to each unit, and the corresponding degrees of the circle, reckoned from N towards E, are given at the foot of each page; whence the intermediate values may be readily found.

The mean bi-hourly directions are given in degrees of the circle, at the foot of each column. They were found by Lambert's method, of resolving each wind into its rectangular co-ordinates, applied as follows. Let

$$\begin{aligned} A &= n \sin w + n' \sin w' + n'' \sin w'' + \&c. \\ B &= n \cos w + n' \cos w' + n'' \cos w'' + \&c. \end{aligned}$$

Where n, n', n'' , are the number of periods, during which the wind blew from the points w, w', w'' , &c. Then, θ , being the mean direction; R, the resultant of all the winds; N, the number of observations,

$$\begin{aligned} \tan \theta &= \frac{A}{B} \\ R &= \sqrt{\frac{A^2 + B^2}{N}} \end{aligned}$$

The latter value is that which we have termed "intensity." By German writers it is usually denominated "*Stärke*," which English writers render by the word "force." "Prevalence" would perhaps better express its meaning, since what it really implies is the prevalence, or weight, of the mean direction in relation to all other directions, regarded as unity. At any rate, it must not be confounded with *dynamical* force.

The following table exhibits at one view the mean monthly bi-hourly results.

| Month. | Hours from Noon. | | | | | | | | | | | |
|--------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 |
| January.... | 268 | 267 | 262 | 245 | 253 | 258 | 266 | 267 | 264 | 254 | 265 | 263 |
| February.... | 200 | 214 | 206 | 195 | 190 | 185 | 189 | 181 | 186 | 175 | 180 | 188 |
| March..... | 219 | 206 | 217 | 241 | 230 | 227 | 208 | 197 | 201 | 226 | 271 | 240 |
| April | 230 | 221 | 227 | 183 | 186 | 222 | 200 | 192 | 173 | 185 | 252 | 214 |
| May | 43 | 42 | 46 | 47 | 58 | 80 | 59 | 52 | 53 | 64 | 60 | 55 |
| June..... | 48 | 111 | 5 | 40 | 75 | 81 | 60 | 56 | 37 | 61 | 51 | 78 |
| July | 244 | 247 | 245 | 249 | 239 | 234 | 238 | 239 | 240 | 241 | 247 | 243 |
| August..... | 278 | 293 | 287 | 283 | 277 | 283 | 279 | 288 | 277 | 287 | 288 | 318 |
| September. | 229 | 226 | 216 | 209 | 206 | 203 | 200 | 198 | 196 | 198 | 197 | 195 |
| October.... | 225 | 253 | 267 | 237 | 243 | 237 | 238 | 229 | 225 | 223 | 200 | 105 |
| November. | 54 | 53 | 47 | 40 | 31 | 30 | 28 | 30 | 53 | 48 | 43 | 28 |
| December. | 261 | 255 | 257 | 251 | 255 | 254 | 256 | 256 | 252 | 251 | 250 | 249 |
| Mean | 251 | 248 | 246 | 238 | 235 | 235 | 238 | 238 | 227 | 227 | 239 | 241 |

The annual means (in the last line) were determined by resolving the several monthly means into their rectangular co-ordinates, allowing to each a weight proportionate to its intensity, given in the Register.

Looking at the monthly results separately, there appears to be but little law pervading them. The annual means, however, indicate very distinctly a *daily periodicity*,—*retrograde* from Noon till 16^h or 18^h;—*direct*, from that time till Noon; the angle passed over being 24°. I mention this circumstance without intending to attach much weight to the observations of a single year; especially as six months' observation in 1856 fail to give any such indication.

Velocity of the Wind.

The velocity is given in English miles, each result showing, according to Dr. Robinson's theory, three times the distance passed over by the hemispherical cups.

The following table is a summary of the bi-hourly results given in our Register.

WIND'S BI-HOURLY VELOCITY IN 1857.

| Month. | 0-2 | 2-4 | 4-6 | 6-8 | 8-10 | 10-12 | 12-14 | 14-16 | 16-18 | 18-20 | 20-22 | 22-0 |
|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1857. | | | | | | | | | | | | |
| January | 14.3 | 12.6 | 12.0 | 11.9 | 12.1 | 11.4 | 11.5 | 10.9 | 12.1 | 12.0 | 13.6 | 14.5 |
| February..... | 12.3 | 11.5 | 8.4 | 7.2 | 7.0 | 6.2 | 6.0 | 6.5 | 7.2 | 7.8 | 9.0 | 11.0 |
| March..... | 15.9 | 16.0 | 13.2 | 11.0 | 10.3 | 8.9 | 9.6 | 9.0 | 10.6 | 11.5 | 13.9 | 16.7 |
| April | 12.9 | 12.8 | 11.7 | 8.5 | 7.0 | 6.5 | 6.5 | 5.8 | 7.0 | 9.0 | 10.1 | 11.3 |
| May | 12.7 | 12.4 | 12.4 | 8.4 | 6.6 | 4.1 | 4.4 | 4.7 | 5.9 | 9.0 | 11.4 | 12.3 |
| June | 11.8 | 11.2 | 10.1 | 6.9 | 5.6 | 5.2 | 5.1 | 5.4 | 6.1 | 8.8 | 11.4 | 11.3 |
| July | 14.7 | 15.1 | 13.9 | 10.6 | 7.3 | 5.8 | 6.7 | 7.3 | 7.6 | 10.0 | 11.7 | 12.9 |
| August | 9.0 | 9.0 | 8.1 | 5.6 | 4.1 | 3.8 | 3.0 | 3.5 | 3.3 | 5.1 | 7.3 | 8.2 |
| September ... | 8.3 | 8.1 | 5.6 | 4.2 | 3.9 | 3.4 | 3.5 | 3.7 | 3.8 | 5.2 | 6.2 | 8.5 |
| October | 9.8 | 8.8 | 7.4 | 6.7 | 6.0 | 5.7 | 5.8 | 5.9 | 6.2 | 6.0 | 8.2 | 9.6 |
| November ... | 8.6 | 7.0 | 6.2 | 6.5 | 5.0 | 5.5 | 5.1 | 5.2 | 5.4 | 4.9 | 6.2 | 8.8 |
| December | 12.2 | 11.6 | 9.2 | 9.3 | 8.9 | 9.8 | 9.0 | 8.3 | 9.0 | 9.3 | 9.6 | 11.2 |
| Mean bi-hourly Velocity. } | 11.88 | 11.34 | 9.85 | 8.07 | 6.98 | 6.36 | 6.35 | 6.35 | 7.02 | 8.22 | 9.88 | 11.36 |
| Relative bi-hourly Velocity. } | 1.376 | 1.312 | 1.141 | 0.935 | 0.810 | 0.737 | 0.735 | 0.735 | 0.813 | 0.952 | 1.145 | 1.316 |

The relative velocity is represented nearly by

$$V_x = 1.0 + 0.329 \sin (x + 92^\circ) + 0.053 \sin (2x + 91^\circ)$$

an expression agreeing very nearly with that we found from 6 months' observation in 1856, which (after subtracting 180° from the subsidiary angle of the second term, for the difference in the commencement of the day) was,

$$V_x = 1.0 + 0.335 \sin (x + 86^\circ) + 0.072 \sin (2x + 99^\circ)$$

The mean bi-hourly velocity, according to this table, is 8.64 miles. Multiplying this quantity by the relative bi-hourly values deduced from the above formula, we obtain the velocities given in the second column of the following table.

| Hours from Noon. | Wind's Velocity. | | Excess of Cal- culation. |
|---------------------------|------------------|-----------|--------------------------------|
| | Calcu- lated. | Observed. | |
| | Miles. | Miles. | |
| 0—2 | 11.90 | 11.88 | + .02 |
| 2—4 | 11.27 | 11.34 | — .07 |
| 4—6 | 9.72 | 9.85 | — .13 |
| 6—8 | 8.08 | 8.07 | + .01 |
| 8—10 | 6.90 | 6.98 | — .08 |
| 10—12 | 6.37 | 6.36 | + .01 |
| 12—14 | 6.25 | 6.35 | — .10 |
| 14—16 | 6.44 | 6.35 | + .09 |
| 16—18 | 7.05 | 7.02 | + .03 |
| 18—20 | 8.27 | 8.22 | + .05 |
| 20—22 | 9.91 | 9.88 | + .03 |
| 22—0 | 11.37 | 11.36 | + .01 |
| Probable Error \pm .045 | | | |

These results, like those of last year, are derived from observations made in a position where the elevation of the Anemograph above the ground did not exceed 22 feet, and where, though the Instrument was equally exposed on all sides, the force of the wind is much modified by proximity to the soil, and by the presence of buildings in the immediate neighbourhood.

Having obtained permission from the Board of Radcliffe Trustees to erect a more suitable apartment on the Tower of the Observatory, which is about 110 feet above the ground; before removing the Instrument, I placed there a small Anemometer of Professor Smyth's construction, which was regularly compared with a similar one at the lower station. The result of these comparisons was as follows.

COMPARISON OF THE VELOCITY OF THE WIND AT THE STATION 22 FEET
AND ON THE TOWER 110 FEET ABOVE THE GROUND,

From 1 December, 1857, to 30 November, 1858.

| Month. | No. of Comparisons. | Distance travelled. | | Relative Excess of Higher Gauge. |
|----------------|---------------------|---------------------|---------------|----------------------------------|
| | | Lower Gauge. | Higher Gauge. | |
| 1857. | | Miles. | Miles. | |
| December | 31 | 3635 | 8134 | 2.24 |
| 1858. | | | | |
| January | 31 | 3445 | 8382 | 2.43 |
| February | 28 | 3554 | 7414 | 2.09 |
| March | 29 | 3553 | 7674 | 2.16 |
| April | 30 | 3740 | 7825 | 2.09 |
| May | 31 | 3805 | 8881 | 2.33 |
| June | 30 | 2461 | 5442 | 2.21 |
| July | 31 | 3092 | 6789 | 2.20 |
| August | 28 | 2744 | 6400 | 2.33 |
| September ... | 30 | 2740 | 6571 | 2.39 |
| October | 31 | 3044 | 7502 | 2.47 |
| November ... | 30 | 3066 | 6906 | 2.25 |
| Year | 360 | 38879 | 87920 | 2.26 |

Hence the intensity of the wind on the Tower is 2.26 greater than at 22 feet, and the mean bi-hourly velocity is 19.53 miles, instead of 8.64 miles.

Wishing to compare the foregoing with the contemporary results obtained at Kew and Liverpool, by essentially similar means, I have been favoured by Mr. Welsh and Mr. Hartnup with the tables, which will be found at pp. [94—96], containing the mean hourly velocity of the wind,—at Kew during the years 1856—57;—and at Liverpool during the year 1857.

These tables give the *hourly* velocity. To render them strictly comparable with our own, in which the periods are *bi-hourly*, I have added together each pair of consecutive hours, and thence deduced the following expressions, in terms of relative velocity.

$$\begin{aligned}
 \text{Kew 1856 ... } V_x &= 1.0 + 0.262 \sin(x + 78.5) + 0.067 \sin(2x + 89.5) \\
 \text{1857 } &= 1.0 + 0.306 \sin(x + 78.8) + 0.079 \sin(2x + 90.5) \\
 \text{Liverpool 1857 } &= 1.0 + 0.150 \sin(x + 86.3) + 0.037 \sin(2x + 58.5)
 \end{aligned}$$

The latter expression is almost identical with that deduced from 4 years' observation (1852—55) at the same place (*R. O. Vol. xvii. p. [xxiii]*).

The mean bi-hourly velocity at Kew in 1856 was 20.72 miles; in 1857, 19.52 miles; at Liverpool in 1857 it was 23.00 miles. Multiplying these quantities respectively by the relative bi-hourly velocities deduced from the above formulæ, we obtain the calculated values in the following table.

WIND'S BI-HOURLY VELOCITY.

| Hours from Noon. | Kew, 1856. | | | Kew, 1857. | | | Liverpool, 1857. | | |
|----------------------------|-------------|-----------|------------------------|-------------|-----------|------------------------|------------------|-----------|------------------------|
| | Calculated. | Observed. | Excess of Calculation. | Calculated. | Observed. | Excess of Calculation. | Calculated. | Observed. | Excess of Calculation. |
| | Miles. | Miles. | | Miles. | Miles. | | Miles. | Miles. | |
| 0—2 | 27.42 | 26.97 | + 0.45 | 26.63 | 26.12 | + 0.51 | 27.14 | 27.4 | — 0.26 |
| 2—4 | 26.57 | 26.85 | — .28 | 25.47 | 25.17 | + .30 | 26.80 | 26.7 | + .10 |
| 4—6 | 23.64 | 23.40 | + .24 | 22.39 | 23.05 | — .66 | 24.86 | 24.7 | + .16 |
| 6—8 | 20.43 | 20.04 | + .39 | 18.89 | 18.83 | + .06 | 22.47 | 22.5 | — .03 |
| 8—10 | 18.32 | 18.71 | — .39 | 16.73 | 16.04 | + .69 | 20.77 | 20.7 | + .07 |
| 10—12 | 17.36 | 16.97 | + .39 | 15.71 | 15.75 | — .04 | 20.17 | 20.1 | + .07 |
| 12—14 | 16.81 | 17.15 | — .34 | 15.03 | 15.18 | — .15 | 20.33 | 20.1 | + .23 |
| 14—16 | 16.29 | 16.31 | — .02 | 14.26 | 14.34 | — .08 | 20.63 | 20.7 | — .07 |
| 16—18 | 16.44 | 16.25 | + .19 | 14.65 | 14.43 | + .22 | 21.05 | 20.9 | + .15 |
| 18—20 | 18.03 | 18.37 | — .34 | 16.65 | 16.89 | — .24 | 22.01 | 21.9 | + .11 |
| 20—22 | 21.71 | 21.78 | — .07 | 20.84 | 20.25 | + .59 | 23.81 | 23.7 | + .11 |
| 22—0 | 25.45 | 25.73 | — .28 | 24.50 | 25.01 | — .51 | 25.92 | 25.8 | + .12 |
| Probable Error \pm 0.218 | | | | \pm 0.284 | | | \pm 0.098 | | |

Thus at all the three stations the *times* of maximum and minimum velocity are, as might be expected, nearly the same. But referring to the formulæ for expressing the relative velocity, it will be seen, that the coefficient of the second term is much less at Liverpool than at Kew or Oxford, showing that the daily *changes* of velocity are less. This I remarked last year, and was disposed to ascribe it to some imperfection in our own measures.

Our agreement with Kew seems to show that such is not the case, and that the difference is *real*. Admiral Fitzroy has noticed the influence which the proximity to the river Mersey produces on the *direction* of the wind at the Liverpool Observatory, diverting it from W S W, the usual

wind of this country, to W N W and S S E. Probably the same cause may tend to equalize the *relative* intensity; though the *absolute* intensity appears to be increased thereby;—the bi-hourly velocity in 1857 being, as we have seen, at

| | |
|-----------------------------------------|--------------|
| Liverpool | 23.00 Miles. |
| Kew | 19.52 |
| Oxford (Tower of the Observatory) | 19.53 |

Meteorological Journal.

The indications of the Barometer and Thermometers, in the 2d, 3d, and 4th columns of this Journal, are the means of the 12 daily readings of the respective instruments, given in the foregoing Registers; or, on those days when the Register is imperfect, of the recorded readings corrected for horary changes. They represent, therefore, the mean indications from the noon of one day to the noon of the next.

The highest and lowest temperature in the shade, sun, and grass, were taken from self-registering instruments, by Negretti and Zambra, (that exposed to the sun having a Black Bulb.) These are compared from time to time with a Standard, (No. 230,) by the same makers, to which all our thermometric indications are referred.

The Rain is received in a circular vessel of 10 inches diameter, (placed on the ground in an exposed situation,) and the quantity is measured in a graduated glass tube of one inch diameter. The Rain-gauge is examined every day at 22^h, and when there has been any Fall, the amount is entered into the Journal, opposite the day of examination.

The direction, and horizontal motion of the Wind, are the daily means from the Register; or, when it fails, the direction is the mean of eye observations made 3 times a day, and the horizontal motion is that marked by a small Anemometer of Professor C. P. Smyth's construction.

The amount of Cloud is estimated from 0 to 10;—0, representing a cloudless,—10, an overcast, sky. The numbers given are the means of three estimates daily.

The description of weather applies for the most part from 8 a.m. till 11 p.m. of the current Civil day. In cases of a double description, the first applies to the forenoon.

The days of the Moon's changes, perigee and apogee, and the occurrence of remarkable meteoric phenomena, are given at the foot of each page.

Summary of Results, pp. [75—76.]

The normal values in these tables, except those relating to the wind, are taken from Vol. 15, pp. [xxvii], [xxviii]. They are derived from 25 years' observation. The normal direction, intensity, &c. of the wind were found from elements given in Vol. 14, p. [xv].

The columns entitled "probable excess" show the amount of variation to which the several elements are liable, according to the theory of probabilities. They are intended to show the limits within which it is an even chance, that the monthly means of one year will agree with those of another.

The columns entitled "excess in 1857" give the differences between the several results in 1857, and the mean. These quantities applied algebraically to the mean values, will give the monthly means in 1857; and a comparison of them, with the corresponding "probable excesses," will shew whether any month has been abnormal, or not, with regard to any particular element.

The mean monthly direction, intensity, &c. of the wind, were found from daily values, by Lambert's method.

The direction is given in degrees of the circle, commencing from N, and counted in the direction E, S, W. The *positive* sign, in the column "excess," shows that the difference between the direction in 1857 and the normal direction follows this order.

Pressure of Dry Air under different Winds, [pp. 77—78.]

This table was constructed as follows. The mean daily direction was taken from the Journal, together with the corresponding readings of the Barometer, and arranged according to the several points. The number of points were then reduced to 8, by combining the number of days under the principal points with those under the next preceding, and the next following, allotting to each a weight, according to the number of observations; thus,

$$\text{NNW} + \text{N} + \text{NNE} = \text{N}; \quad \text{NNE} + \text{NE} + \text{ENE} = \text{NE}, \text{ \&c.}$$

The 1st column contains the mean date of each of these groups: the 2d, the mean indication of the Barometer: the 3d gives the force of vapour, according to the 2d Edition of Mr. Glaisher's tables; the 4th, the reduction of the mean monthly to the mean annual pressure, taken from the following table, (the result of 25 years' observation.) The object of this correction is to make the several results directly comparable with each other, although during some months there may be, and frequently is, altogether a failure of particular winds.

| Month. | Atmo- spheric Pressure. | Pressure of Vapour. | Pressure of Dry Air. | Excess from Annual Mean. |
|---------------|-------------------------------|---------------------------|----------------------------|-----------------------------------|
| | in. | in. | in. | in. |
| January | 29.721 | .203 | 29.518 | + 0.096 |
| February..... | .700 | .200 | .500 | + .078 |
| March..... | .690 | .206 | .484 | + .062 |
| April..... | .700 | .235 | .465 | + .043 |
| May | .733 | .306 | .427 | + .005 |
| June | .725 | .391 | .334 | — .008 |
| July | .721 | .425 | .296 | — .126 |
| August | .730 | .394 | .336 | — .086 |
| September... | .718 | .338 | .380 | — .042 |
| October | .684 | .289 | .395 | — .027 |
| November ... | .677 | .247 | .430 | + .008 |
| December | .707 | .214 | .493 | + .071 |
| Mean..... | 29.709 | .287 | 29.422 | |

This is the same table as we gave last year; the differences from the corresponding one in our 16th Volume, are in consequence of the adoption of the *second* (instead of the *first*) Edition of Mr. Glaisher's *Hygrometrical Tables*, in which he has used Regnault's elements, instead of Dalton's.

The pressure of Dry Air in 1857 was 29.448 inches; the excesses of the several results of the table at pp. [77—78], from this value, are given in the 2d column of the table below. The 4th column contains the corresponding excesses from the mean pressure, in 1853—56 (Vol. 17, p. [xxviii]). The 6th column gives the results of the five years, combined according to the number of observations. The mean pressure, in the last column, was obtained by adding the mean excesses to 29.422, the general mean annual pressure of dry air, as given in the foregoing table.

| | Excess in 1857. | No. of Obs. | Excess in 1853-56. | No. of Obs. | Mean Excess. | No. of Obs. | Mean Pressure of Dry Air |
|----|-----------------------|-------------------|--------------------------|-------------------|-----------------|-------------------|--------------------------------|
| | in. | | in. | | in. | | in. |
| N | +0.085 | 55 | +0.104 | 309 | +0.101 | 364 | 29.523 |
| NE | + .128 | 82 | + .134 | 240 | + .132 | 322 | .554 |
| E | + .064 | 48 | + .030 | 135 | + .037 | 183 | .459 |
| SE | — .204 | 34 | — .086 | 68 | — .125 | 102 | .297 |
| S | — .108 | 61 | — .143 | 171 | — .139 | 232 | .283 |
| SW | — .014 | 134 | — .126 | 341 | — .094 | 475 | .328 |
| W | — .016 | 104 | — .044 | 348 | — .037 | 452 | .385 |
| NW | + .027 | 36 | + .044 | 216 | + .042 | 252 | .464 |

Force of Vapour.

Reducing the pressure of vapour, given in the 3d column of the several sections of the table at pp. [77—78], to annual values, (by applying corrections derived from the third column of the table at p. xxvii,) we find the pressure under different winds as follows.

PRESSURE OF VAPOUR UNDER DIFFERENT WINDS.

| | Tabular Mean. | Reduction to Annual Mean. | Mean Pressure of Vapour. | No. of Obs. |
|----|------------------|---------------------------------|-----------------------------------|-------------------|
| | in. | in. | in. | |
| N | 0.287 | — .001 | 0.286 | 55 |
| NE | .304 | — .003 | .301 | 82 |
| E | .311 | + .002 | .313 | 48 |
| SE | .350 | + .004 | .355 | 34 |
| S | .341 | + .010 | .351 | 61 |
| SW | .336 | — .007 | .329 | 134 |
| W | .322 | .000 | .322 | 104 |
| NW | .305 | + .006 | .311 | 36 |

in.

Subtracting 0.316 (the mean pressure during the year 1857) from these quantities, severally, we obtain the excesses under each wind, as given in the 2d column of the table below; and combining them with the corresponding results in 1853—56, (Vol. 17, p. [xxix].) we have the mean of 5 years' observation, given in the 6th column.

| | Excess in 1857. | No. of Obs. | Excess in 1853—56. | No. of Obs. | Mean Excess. | No. of Obs. |
|----|-----------------------|-------------------|--------------------------|-------------------|-----------------|-------------------|
| | in. | | in. | | in. | |
| N | — .030 | 55 | — .026 | 309 | — .027 | 364 |
| NE | — .015 | 82 | — .016 | 240 | — .016 | 322 |
| E | — .003 | 48 | — .004 | 135 | — .004 | 183 |
| SE | + .039 | 34 | + .011 | 68 | + .020 | 102 |
| S | + .035 | 61 | + .045 | 171 | + .043 | 232 |
| SW | + .014 | 134 | + .032 | 341 | + .027 | 475 |
| W | + .006 | 104 | + .018 | 348 | + .015 | 452 |
| NW | — .005 | 36 | — .019 | 216 | — .017 | 252 |

The general mean annual pressure of vapour is $0.287^{\text{in.}}$. Adding to this value the mean excesses in the table, we obtain the mean pressure of vapour under different winds; which again, being added to the corresponding pressure of dry air, gives the atmospheric pressure. These several values are contained in the following table.

| | Mean Pressure of | | |
|----|------------------|----------|-------------|
| | Vapour. | Dry Air. | Atmosphere. |
| | in. | in. | in. |
| N | 0.260 | 29.523 | 29.783 |
| NE | .271 | .554 | .825 |
| E | .283 | .459 | .742 |
| SE | .307 | .297 | .604 |
| S | .330 | .283 | .613 |
| SW | .314 | .328 | .642 |
| W | .302 | .385 | .687 |
| NW | .270 | .464 | .734 |

Temperature under different Winds, pp. [79—80.]

This table was formed in the same manner as that just described.

The reductions to annual temperature were found by subtracting the temperature corresponding to the mean date, (in the column of normal temperatures in the table at p. [83].) from $48^{\circ}.6$, (the general mean annual temperature.)

The excesses of the several mean values from $50^{\circ}.4$, (the mean temperature of 1857,) compared and combined with those of 1853—56, (Vol. 17, p. [xxx]), are given in the 6th column. The values in the last column = $48^{\circ}.6 + \text{mean excess}$.

| | Excess in 1857. | No. of Obs. | Excess in 1853—56. | No. of Obs. | Mean Excess. | No. of Obs. | Mean Tempera- ture. |
|----|-----------------------|----------------|--------------------------|----------------|-----------------|----------------|---------------------------|
| | 0 | | 0 | | 0 | | 0 |
| N | — 3.2 | 55 | — 2.4 | 309 | — 2.5 | 364 | 46.1 |
| NE | — 1.7 | 82 | — 2.6 | 240 | — 2.4 | 322 | 46.2 |
| E | + 0.5 | 48 | — 0.9 | 135 | — 0.5 | 183 | 48.1 |
| SE | + 1.9 | 34 | + 1.0 | 68 | + 1.3 | 102 | 49.9 |
| S | + 2.0 | 61 | + 3.5 | 171 | + 3.1 | 232 | 51.7 |
| SW | + 1.1 | 134 | + 3.0 | 341 | + 2.5 | 475 | 51.1 |
| W | + 1.2 | 104 | + 1.5 | 348 | + 1.4 | 452 | 50.0 |
| NW | — 1.6 | 36 | — 0.8 | 216 | — 0.9 | 252 | 47.7 |

Mean Daily Velocity of Wind and Amount of Cloud under different Winds,
p. [81.]

This table was formed in the same way as the preceding, by taking out the quantities from the Journal, and distributing them among the different winds in the manner described at p. [xxvii.]

Fall of Rain under different Winds, p. [82.]

This table was formed in the same way as the preceding. But, in reducing the intermediate points to the eight principal points of the Compass, we have taken

$$N = \frac{1}{2} NNW + N + \frac{1}{2} NNE; \quad NE = \frac{1}{2} NNE + NE + \frac{1}{2} ENE, \text{ \&c.}$$

The following table shows the relative quantity of Rain collected in the gauge placed on the ground, (which is entered in the Journal,) and in another gauge 22 feet above the ground, which is always measured at the same time.

FALL OF RAIN ON THE GROUND, AND AT 22 FEET ABOVE.

| Month. | Ground. | 22 feet. | Ratio. | 5-year Ratio. |
|---------------|---------|----------|--------|------------------|
| | in. | in. | in. | in. |
| January | 3.18 | 2.62 | 1.214 | 1.192 |
| February..... | 0.32 | 0.25 | 1.280 | 1.218 |
| March..... | 1.54 | 1.30 | 1.185 | 1.222 |
| April | 2.02 | 1.64 | 1.232 | 1.198 |
| May | 1.19 | 0.96 | 1.240 | 1.154 |
| June | 3.04 | 2.54 | 1.197 | 1.116 |
| July | 3.17 | 2.64 | 1.201 | 1.098 |
| August | 3.68 | 2.95 | 1.249 | 1.104 |
| September... | 3.89 | 3.36 | 1.158 | 1.118 |
| October | 4.57 | 3.46 | 1.321 | 1.132 |
| November ... | 1.67 | 1.24 | 1.347 | 1.144 |
| December | 0.66 | 0.54 | 1.222 | 1.164 |
| Year..... | 28.93 | 23.50 | 1.231 | 1.155 |

The following is the distribution of Rain, with regard to quantity.

| Month. | Fall under | | | | | | | | | | | | | | Sum. | Mean of 25 years. | Prob. Excess. | Excess in 1857. |
|-------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------------------------|------------------|-----------------------|
| | Inch. | | | | | | | | | | | | | | | | | |
| | .05 | .10 | .20 | .30 | .40 | .50 | .60 | .70 | .80 | .90 | 1.0 | 1.5 | 2.0 | | | | | |
| | d. | d. | d. | d. | d. | d. | d. | d. | d. | d. | d. | d. | d. | d. | days. | days. | days. | |
| January . | 5 | 2 | 6 | 2 | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... | 18 | 10.1 | + 3.2 | + 7.9 | |
| February. | 5 | 2 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 8 | 10.1 | 2.3 | - 2.1 | |
| March ... | 7 | 6 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 15 | 9.3 | 3.6 | + 5.7 | |
| April | 3 | 4 | 4 | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | 13 | 9.8 | 3.1 | + 3.2 | |
| May | 3 | ... | 1 | 1 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | 7 | 9.5 | 3.0 | - 2.5 | |
| June..... | 2 | 2 | 4 | ... | ... | ... | ... | 1 | ... | 2 | ... | ... | ... | 11 | 11.5 | 2.7 | - 0.5 | |
| July | 2 | ... | 1 | ... | 2 | 1 | ... | ... | ... | ... | ... | ... | 1 | 7 | 11.4 | 2.4 | - 4.4 | |
| August ... | 2 | ... | 2 | 2 | ... | ... | 1 | 1 | 1 | ... | 1 | ... | ... | 10 | 11.3 | 2.8 | - 1.3 | |
| Septem. . | 6 | 3 | 1 | 2 | 2 | 1 | ... | ... | 1 | ... | ... | 1 | ... | 17 | 11.0 | 2.4 | + 6.0 | |
| October . | 7 | 1 | ... | 3 | 3 | ... | 2 | ... | ... | ... | ... | ... | 1 | 17 | 11.8 | 3.2 | + 5.2 | |
| Novem. ... | 14 | ... | 1 | 2 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 18 | 12.2 | 2.9 | + 5.8 | |
| Decem. ... | 2 | 2 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 | 11.5 | 3.6 | - 5.5 | |
| Sum... | 58 | 22 | 24 | 13 | 10 | 4 | 3 | 2 | 3 | 3 | 2 | 1 | 2 | 147 | 129.5 | + 11.0 | + 17.5 | |

NUMBER OF OCCASIONAL METEORIC PHENOMENA IN EACH MONTH OF THE YEAR 1857.

| Month. | Snow. | Hail or Sleet. | Aurora Borealis. | Thunder and Lightning. | Thunder only. | Lightning only. |
|---------------------|-------|----------------------|---------------------|------------------------------|------------------|--------------------|
| | Days. | Days. | Days. | Days. | Days. | Days. |
| January | 8 | 2 | ... | ... | ... | ... |
| February | 3 | ... | ... | ... | ... | ... |
| March | 4 | 1 | ... | ... | ... | ... |
| April | 1 | 3 | ... | ... | ... | ... |
| May | ... | ... | ... | 3 | ... | 1 |
| June | ... | 1 | ... | 4 | 2 | ... |
| July | ... | ... | ... | 3 | ... | ... |
| August | ... | ... | ... | 3 | ... | ... |
| September ... | ... | ... | ... | ... | ... | ... |
| October | ... | ... | ... | ... | ... | ... |
| November | 1 | ... | ... | ... | ... | ... |
| December | ... | ... | 1 | ... | ... | ... |
| Sum | 17 | 7 | 1 | 13 | 2 | 1 |
| Mean of 25 years | 10.1 | 3.8 | 1.1 | 3.5 | 3.6 | 3.6 |

Mean Temperature for every 5 Days, p. [83.]

The column in this table containing the normal mean temperature was constructed from the observations made daily, at 22^h, during 25 years, reduced to the mean of the day by applying the Greenwich corrections. The temperatures in 1857, are the 5-day means of the Journal at pp. [63—74.]

It will be seen by this table, that the normal periods of extreme and mean temperature, at this station, are,

| | |
|-------------------|-----------------|
| Minimum | Jan. 11—15. |
| Spring Mean..... | April 26—30. |
| Maximum..... | July 31—Aug. 3. |
| Autumn Mean | Oct. 13—17. |

Oscillations of the Barometer, pp. [84—85.]

This table is intended to show all the variations of the Barometer, throughout the year 1857, amounting to, or exceeding, $\frac{1}{10}$ th of an inch; so that a graphic projection of the quantities given will represent the undulations of the atmosphere which occurred during the year, beyond the above limits, and the time at which the changes took place, within two hours.

The construction of the table is simply this;—the recorded quantities in the Register were followed (disregarding changes less than 0.1 inch) until they reached their maximum or minimum limit, and then they were again traced to the other extreme. These extremes, the times at which they occurred, and the corresponding direction of the wind, are given in the table.

Changes of Wind, &c. pp. [86—93.]

This table exhibits the changes of wind during the year 1857, amounting to or exceeding 45°, (in a few instances, less.)

The successive directions given in the Register, not differing from each other more than 2 units of the scale, (equivalent to 45°,) were grouped together, and their means taken. Then, if among the several groups thus formed, it was found that the means of 2 or more successive groups fell within the above limit, they again were grouped together, allotting to each group a weight proportional to the time of continuance.

Arranging the results under each wind separately, we have,

| No. of Changes. | | Direction of Changes. | | Duration of Changes. | | Total Duration. | Angular Motion. | | Horizontal Motion. | | Total Horizontal Motion |
|-----------------|-------|-----------------------|-----|----------------------|------|-----------------|-----------------|------|--------------------|--------|-------------------------|
| | | | | | | | | | | | |
| | | + | — | h. | h. | h. | ° | ° | Miles. | Miles. | Miles. |
| 17 | to N | 12 | 5 | 376 | 94 | 470 | 1125 | 390 | 1916 | 390 | 2306 |
| 9 | NNE | 4 | 5 | 146 | 216 | 362 | 135 | 420 | 490 | 702 | 1192 |
| 15 | NE | 7 | 8 | 590 | 554 | 1144 | 495 | 720 | 1986 | 3144 | 5130 |
| 15 | ENE | 6 | 9 | 290 | 220 | 510 | 360 | 788 | 742 | 1039 | 1781 |
| 10 | E | 7 | 3 | 228 | 74 | 302 | 606 | 270 | 723 | 220 | 943 |
| 2 | ESE | 2 | 0 | 20 | 0 | 20 | 135 | 0 | 66 | 0 | 66 |
| 9 | SE | 8 | 1 | 126 | 52 | 178 | 967 | 90 | 378 | 135 | 513 |
| 31 | SSE | 10 | 21 | 298 | 576 | 874 | 990 | 1793 | 838 | 2196 | 3034 |
| 19 | S | 1 | 18 | 32 | 334 | 366 | 135 | 1170 | 105 | 1088 | 1193 |
| 13 | SSW | 4 | 9 | 88 | 190 | 278 | 315 | 472 | 197 | 760 | 957 |
| 18 | SW | 10 | 8 | 352 | 396 | 748 | 697 | 540 | 1611 | 1573 | 3184 |
| 52 | WSW | 34 | 18 | 988 | 842 | 1830 | 2970 | 1440 | 4891 | 4779 | 9670 |
| 17 | W | 13 | 4 | 670 | 166 | 836 | 967 | 225 | 3881 | 713 | 4594 |
| 4 | WNW | 1 | 3 | 248 | 32 | 280 | 90 | 225 | 1553 | 172 | 1725 |
| 9 | NW | 9 | 0 | 194 | 0 | 194 | 832 | 0 | 419 | 0 | 419 |
| 15 | NNW | 9 | 6 | 256 | 122 | 378 | 870 | 516 | 1142 | 398 | 1540 |
| ... | ..... | 137 | 118 | 4902 | 3868 | 8770 | 11689 | 9059 | 20938 | 17309 | 38247 |

The table above shows the number of times the wind arrived at each of the specified points; the course in which it shifted, whether *direct* or *retrograde*; and in each case, its duration; its angular, and its horizontal motion.

Dividing the circle into quadrants, and making the quadrant

$$\begin{aligned} \text{N to E} &= \frac{1}{2} \text{N} + \text{NNE} + \text{NE} + \text{ENE} + \frac{1}{2} \text{E} \\ \text{E to S} &= \frac{1}{2} \text{E} + \text{ESE} + \text{SE} + \text{SSE} + \frac{1}{2} \text{S}; \\ &\text{\&c.} \end{aligned}$$

the number of *direct* and *retrograde* changes are as follows :

| | Direct. | Retro-grade. | $\frac{D}{R}$ |
|---------|---------|--------------|---------------|
| N to E | 26.5 | 26.0 | 1.02 |
| E ... S | 24.0 | 32.5 | 0.59 |
| S ... W | 55.0 | 46.0 | 1.20 |
| W ... N | 31.5 | 13.5 | 2.33 |
| Sum ... | 137.0 | 118.0 | 1.16 |

The *direct* angular motion exceeded the *retrograde*, $263^{\circ} = 7.30$ circumferences of the circle.

From the Directions, and times of duration (disregarding difference of velocity), we have

$$\begin{aligned}\text{Mean Direction} &= 252^{\circ} = \text{N } 72^{\circ} \text{ W} \\ \text{Intensity} &= 0.180\end{aligned}$$

This we may designate the wind's *statical* element; having reference only to duration.

Rejecting duration, and allowing to each wind a weight proportionate to its horizontal motion, we have the *dynamical* element,

$$\begin{aligned}\text{Mean Direction} &= 264^{\circ} = \text{N } 84^{\circ} \text{ W} \\ \text{Intensity} &= 0.745;\end{aligned}$$

And, as the sum of horizontal motion, according to the foregoing table, is 38247 miles,

$$38247 \times .745 = 28494 \text{ miles}$$

is the distance a particle of air over our Anemometer would have been carried in the interval between 1856 December 31 to 1857 December 31, in the direction almost due East.

Illustrations of Barometric and Thermometric Curves during Thunder Storms.

These curves have been very carefully traced from the Photographic records of those days when there are notices, in the Journal, of the occurrence of thunder and lightning. They are intended for further illustration of some remarks I made on the subject on a former occasion, (*R. O. Vol. 15*, pp. [xliii, &c.]) Each plate contains the curves of two days, separated by a longitudinal line. The upper curve in each half represents the curve of the Barometer,—the lower one that of the Thermometer;—but the indications of the instruments marked on the margin will serve sufficiently to distinguish them.

The zero lines on these plates are different, but they are all drawn on the same scale; *viz.*

$$\begin{aligned}\text{Barometer} &= 0.25 \text{ in.} = 0.141 \text{ in. of Pressure.} \\ \text{Thermometer} &= 0.25 \text{ in.} = 3.25^{\circ} \text{ Fahrenheit.}\end{aligned}$$

Descriptions of the weather on the days to which these curves refer, have in some cases been already given in the Journal. But sometimes we

were compelled, for want of space, to abridge the notices which occur in our Day-book. The following descriptions contain all the particulars there noted.

- P. I. May 11. Heavy rain at day break, and occasionally afterwards till 2^h.
Lightning in the evening (thunder said to have been heard).
14. Fair. Lightning after 10^h.
- II. 15. Fair. A thunder storm at night which lasted from 10^h to 12^h.
- June 5. Fair. Distant thunder and lightning from 11^h to 12^h.
- III. 16. Fair. till 1^h, when a shower of rain fell. At 3^h, the sky towards N.N.E overspread with dense black clouds, and a brisk wind blowing from that quarter. The wind then shifted Eastward: distant thunder was heard, followed immediately by rain and stormy wind. Occasional showers afterwards.
19. Fair with heavy clouds, the heat oppressive. At 7^h, drops of rain; distant thunder and lightning. At 8^h, dashing rain. At 12^h, thunder, lightning, and rain.
- IV. 20. Variable (heavy clouds and sunshine). Thunder storms at 8^h and 12^h.
30. Thunder storm with hail and rain from 1^h 15^m to 1^h 45^m. During this time there were 4 claps of thunder accompanied by lightning; 0.52 inch of rain fell. The hail stones were cone-shaped, and the rain was remarked as being *very white*. Frequent showers after.
- V. July 5. Vivid lightning after 9^h, with distant thunder.
6. Rain at 1^h 40^m. At 4^h, thunder (not distant). At 4^h 30^m, the storm over Oxford. At this time the lightning very vivid, followed immediately by thunder and rain. The storm lasted till 6^h, when the weather cleared up. Summer lightning at 9^h 30^m. Some hail stones fell during the storm.
- VI. 27. Distant thunder and rain at 4^h 50^m. Heavy rain after 9^h. Lightning was seen several times during the evening. Heavy rain at intervals throughout the day.
- Aug. 9. Rain and sunshine till 1^h 20^m, when a thunder storm approached. Thunder was heard at the following times. At 1^h 45^m, distant, raining lightly; 2^h 25^m, nearer, raining lightly; 2^h 30^m, still nearer, heavy rain; 2^h 35^m, still heavier peal, rain lighter; 3^h 10^m, continued rumbling for several minutes; 3^h 30^m, two heavy peals with lightning and heavy rain. No more was heard after. Partially clear at night.

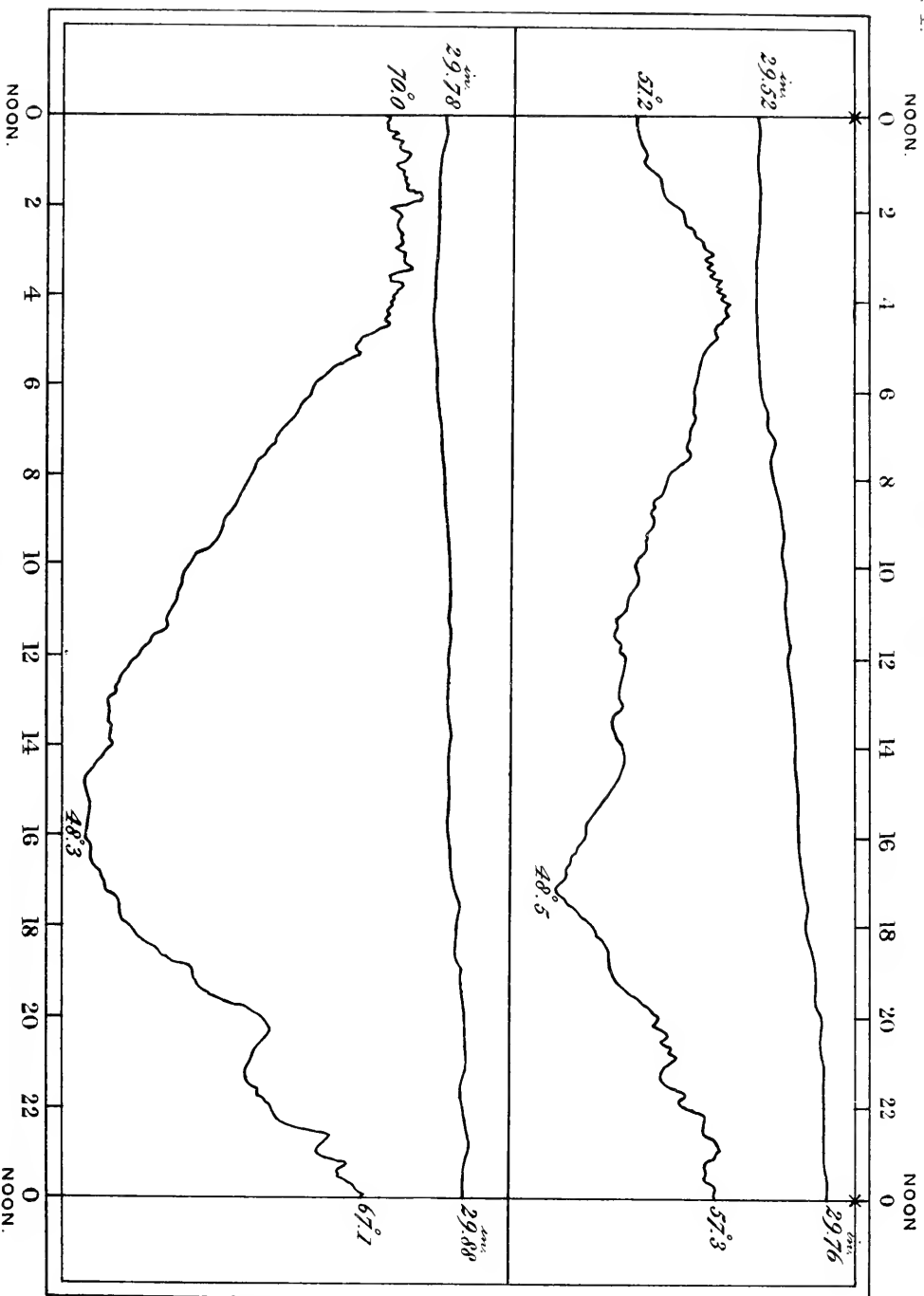
VII. Aug. 13. At 6^h, a storm gathering; at 7^h, heavy storm of thunder, lightning, and rain, which lasted till 10^h 30^m. After this, vivid sheet lightning and distant thunder.

14. At 4^h, distant rumbling of thunder. At 4^h 10, a flash of lightning and peal of thunder. At 5^h 20^m, louder thunder with rain. From this time one almost continuous peal of crackling thunder and various kinds of lightning till 7^h 30^m, when there was a violent peal of thunder. Sheet lightning continued afterwards.

A comparison of these notes with the corresponding illustrations cannot fail, in my opinion, to lead to the inference, that the disturbances exhibited both on the Barometric and Thermometric curves, (especially the former,) are caused by the presence of electricity in the atmosphere, of which we had, on these occasions, sensible proof. But they are more interesting from the circumstance, that similar disturbances occur not unfrequently when there has been no overt manifestation of that agency; especially during the winter months, when, according to the concurrent testimony of all observers, Atmospheric Electricity is most abundant. The disturbances, it will be seen, take place sometimes in the form of *increased*, sometimes in that of *diminished pressure*.

P.I.

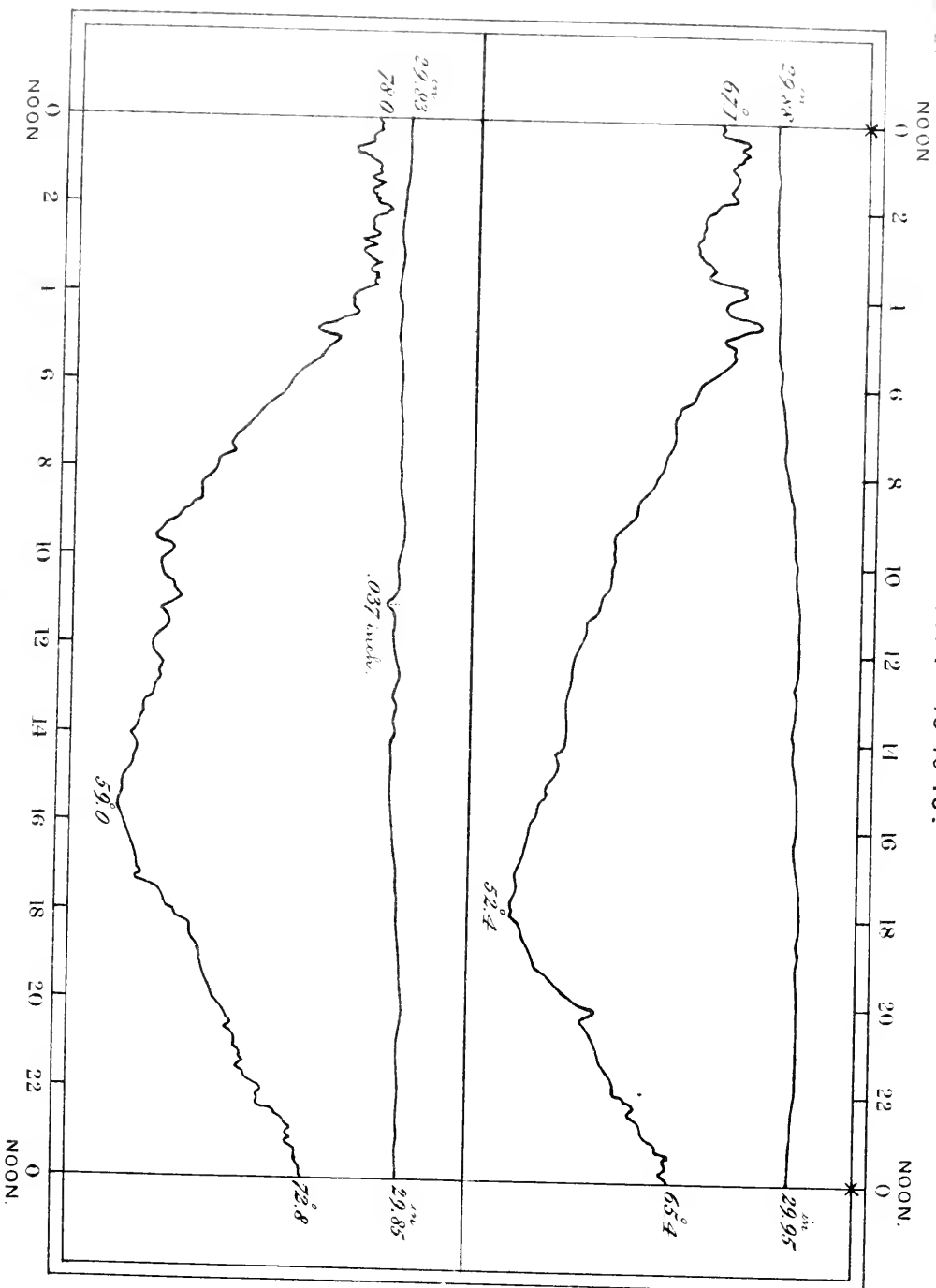
1857. MAY 11 TO 12.

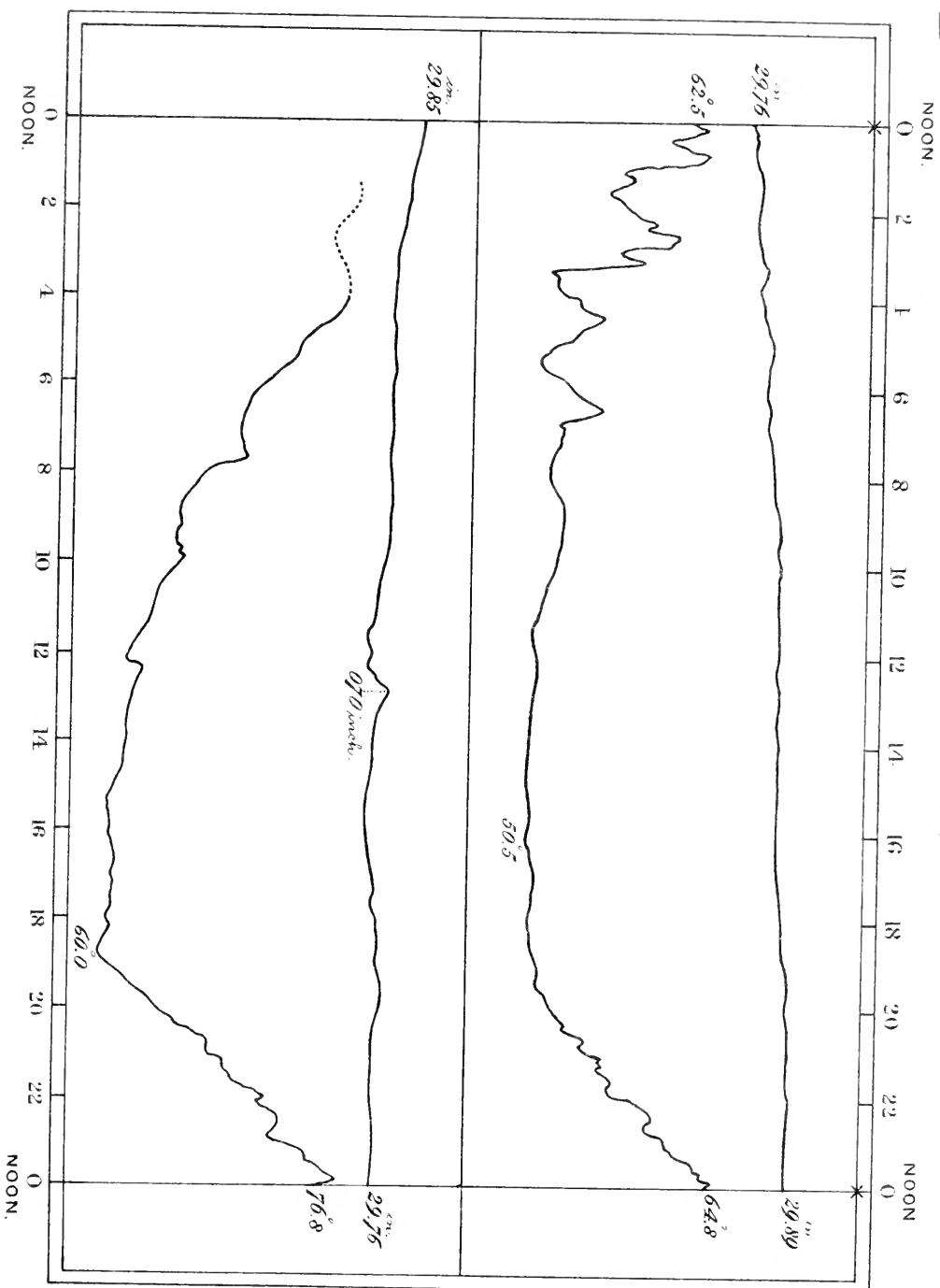


MAY 14 TO 15.

P. II.

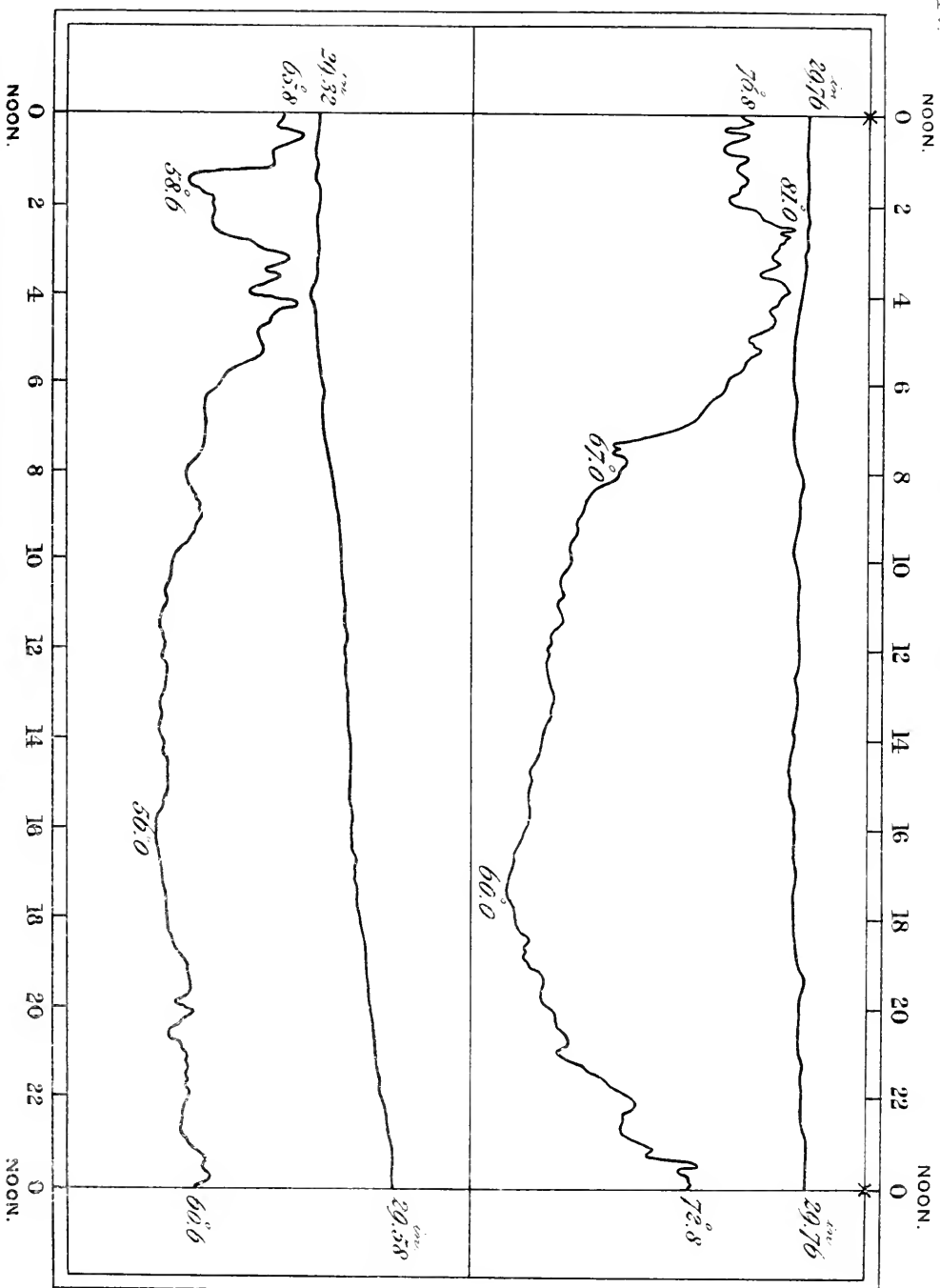
1857. MAY 15 TO 16.





P. IV

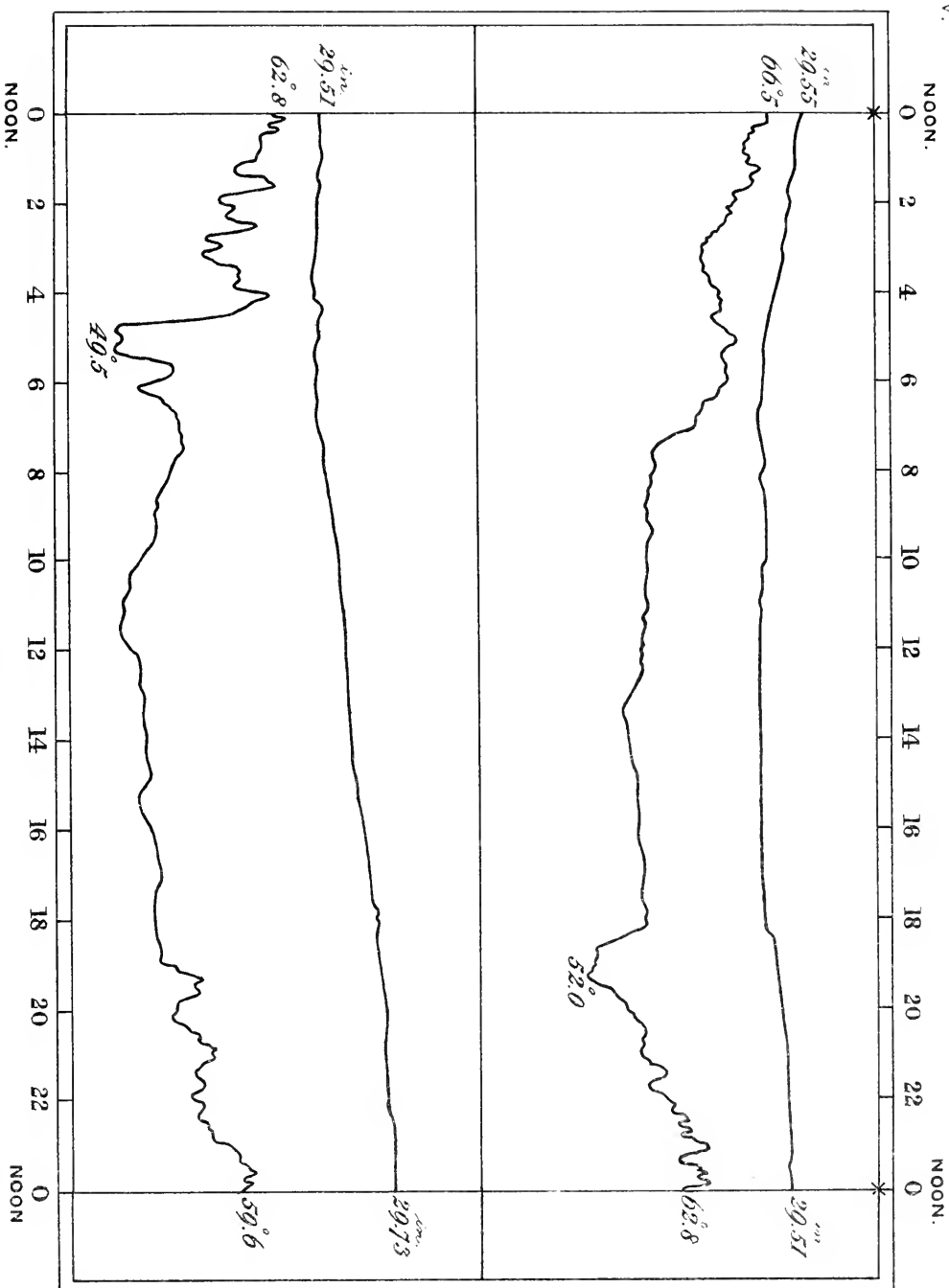
1857. JUNE 20 to 21.



JUNE 30 to JULY 1.

P. V.

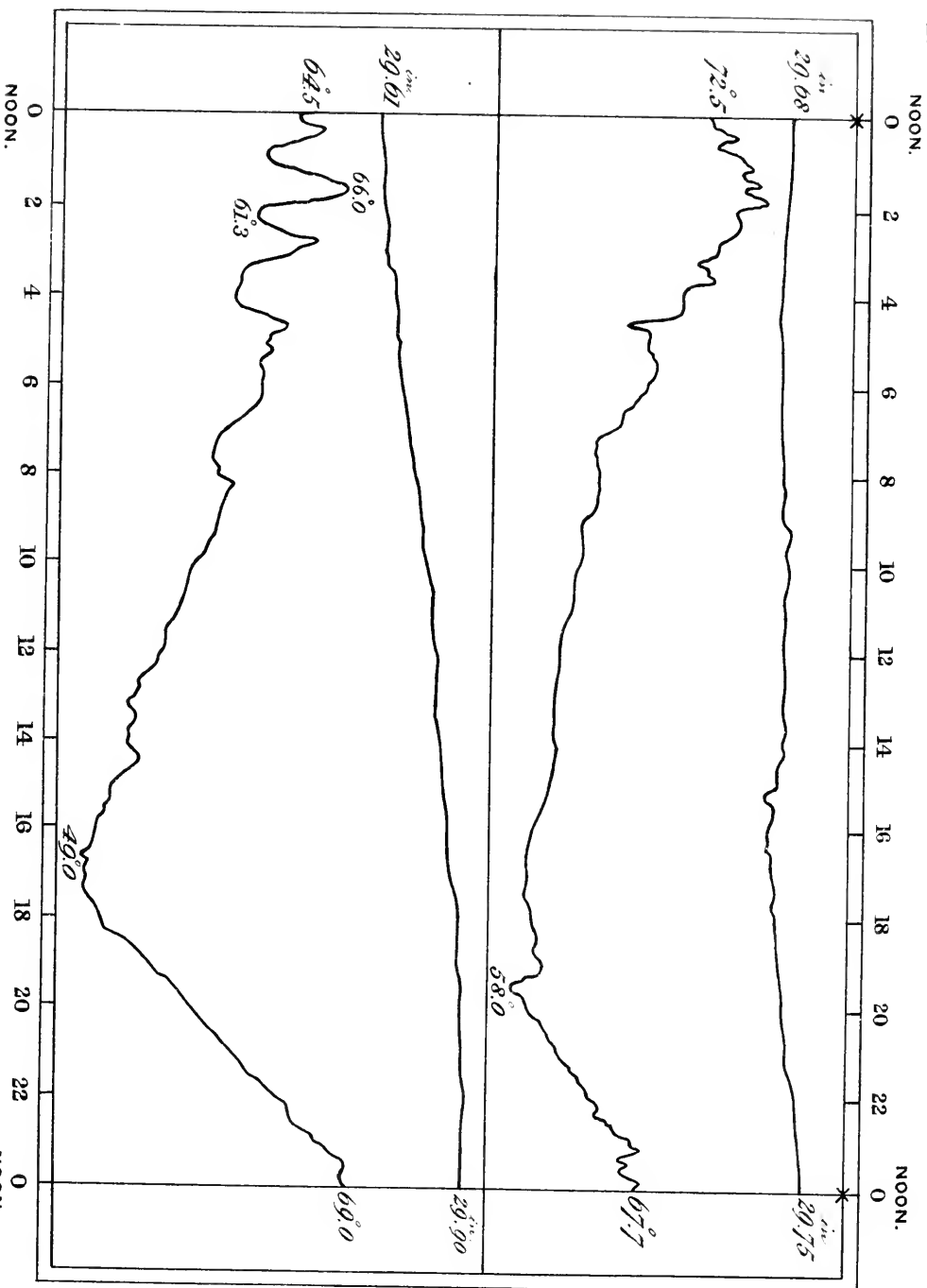
1857. JULY 5 to 6.



JULY 6 to 7.

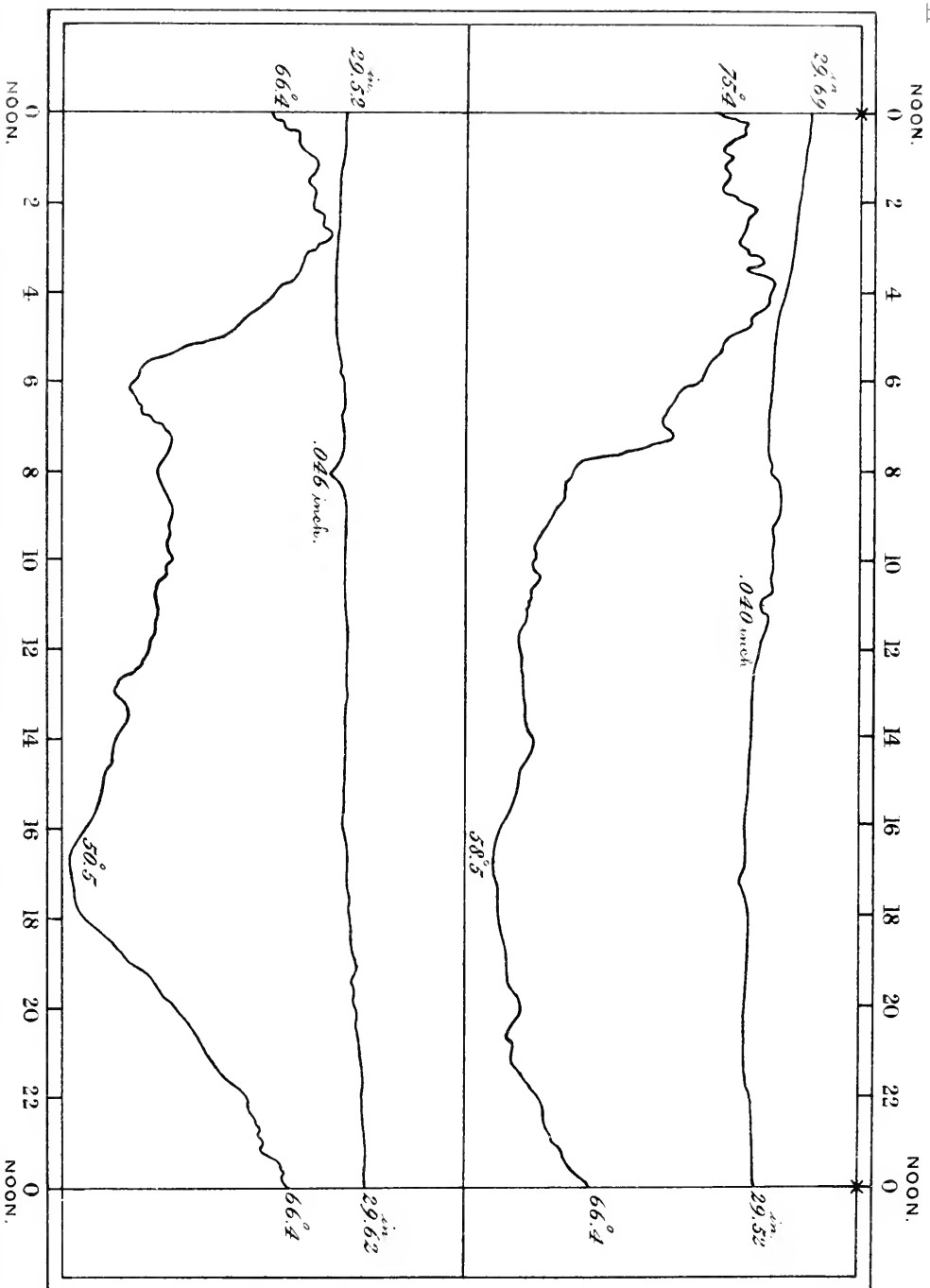
P. VI.

1857. JULY 27 TO 28.



AUGUST 9 TO 10.

1857. AUGUST 13 TO 14.



METEOROGRAPHIC REGISTER

DURING THE YEAR 1857.

BAROGRAPH.

JANUARY, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------------------|---------------------------|------------|------------|------------|------------|------------|--------------|-------------|-------------|-------------|-------------|--------------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| 1856. Dec. 31 | in. ... | in. ... | in. ... | in. ... | in. ... | in. ... | in. (1.91 | in. 1.91 | in. 1.90 | in. 1.89 | in. 1.91 | in. 1.92) |
| 1857. Jan. 1 | 1.89 | 1.86 | 1.85 | 1.81 | 1.75 | 1.68 | 1.59 | 1.55 | 1.54 | 1.52 | 1.54 | 1.56 |
| 2 | 1.56 | 1.55 | 1.56 | 1.56 | 1.55 | 1.52 | 1.46 | 1.39 | 1.27 | 1.14 | 1.04 | 1.00 |
| 3 | 0.94 | 0.88 | 0.81 | 0.78 | 0.82 | 0.88 | 0.92 | 0.94 | 0.94 | 0.94 | 0.95 | 0.97 |
| 4 | 0.98 | 1.00 | 1.05 | 1.14 | 1.22 | 1.29 | 1.35 | 1.44 | 1.52 | 1.61 | 1.69 | 1.76 |
| 5 | 1.81 | 1.83 | 1.89 | 1.92 | 1.93 | 1.93 | 1.93 | 1.95 | 1.94 | 1.94 | 1.95 | 1.99 |
| 6 | 2.01 | 2.02 | 2.06 | 2.09 | 2.13 | 2.16 | 2.16 | 2.17 | 2.18 | 2.18 | 2.20 | 2.21 |
| 7 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 | 2.19 | 2.19 | 2.16 | 2.14 | 2.13 | 2.15 |
| 8 | 2.13 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.08 | 2.06 | 2.04 | 1.99 | 1.98 | 1.95 |
| 9 | 1.89 | 1.82 | 1.76 | 1.71 | 1.65 | 1.55 | 1.45 | 1.41 | 1.34 | 1.31 | 1.31 | 1.37 |
| 10 | 1.42 | 1.42 | 1.35 | 1.27 | 1.10 | 0.91 | 0.82 | 0.74 | 0.70 | 0.74 | 0.81 | 0.87 |
| 11 | 0.91 | 0.95 | 1.02 | 1.10 | 1.12 | 1.15 | 1.17 | 1.15 | 1.12 | 1.09 | 1.05 | 1.02 |
| 12 | 0.97 | 0.92 | 0.91 | 0.92 | 0.95 | 0.98 | 1.01 | 1.05 | 1.10 | 1.15 | 1.22 | 1.29 |
| 13 | 1.34 | 1.37 | 1.41 | 1.46 | 1.51 | 1.56 | 1.62 | 1.68 | 1.74 | 1.81 | 1.85 | 1.91 |
| 14 | 1.92 | 1.93 | 1.99 | 2.01 | 2.01 | 1.99 | 1.99 | 1.97 | 1.95 | 1.91 | 1.88 | 1.86 |
| 15 | 1.81 | 1.79 | 1.81 | 1.83 | 1.86 | 1.88 | 1.89 | 1.89 | 1.90 | 1.91 | 1.92 | 1.95 |
| 16 | 1.95 | 1.96 | 1.98 | 2.02 | 2.06 | 2.09 | 2.10 | 2.12 | 2.13 | 2.15 | 2.15 | 2.15 |
| 17 | 2.15 | 2.13 | 2.12 | 2.13 | 2.15 | 2.15 | 2.15 | 2.13 | 2.13 | 2.12 | 2.12 | 2.13 |
| 18 | 2.13 | 2.10 | 2.09 | 2.08 | 2.08 | 2.08 | 2.08 | 2.03 | 2.02 | 2.02 | 2.08 | 2.12 |
| 19 | 2.13 | 2.13 | 2.15 | 2.14 | 2.12 | 2.08 | 1.99 | 1.89 | 1.76 | 1.64 | 1.51 | 1.39 |
| 20 | 1.25 | 1.19 | 1.15 | 1.12 | 1.12 | 1.12 | 1.15 | 1.18 | 1.21 | 1.25 | 1.29 | 1.35 |
| 21 | 1.38 | 1.38 | 1.41 | 1.44 | 1.48 | 1.51 | 1.55 | 1.59 | 1.61 | 1.65 | 1.63 | 1.69 |
| 22 | 1.66 | 1.61 | 1.54 | 1.48 | 1.39 | 1.34 | 1.29 | 1.27 | 1.24 | 1.19 | 1.18 | 1.17 |
| 23 | 1.14 | 1.07 | 1.05 | 1.02 | 1.01 | 0.97 | 0.91 | 0.91 | 0.88 | 0.89 | 0.92 | 0.94 |
| 24 | 0.97 | 0.98 | 1.00 | 1.01 | 1.02 | 1.02 | 1.00 | 0.98 | 0.98 | 1.01 | 1.08 | 1.15 |
| 25 | 1.19 | 1.25 | 1.31 | 1.37 | 1.41 | 1.45 | 1.48 | 1.49 | 1.49 | 1.49 | 1.51 | 1.54 |
| 26 | 1.55 | 1.56 | 1.61 | 1.64 | 1.66 | 1.69 | 1.71 | 1.72 | 1.72 | 1.74 | 1.75 | 1.75 |
| 27 | 1.74 | 1.71 | 1.71 | 1.72 | 1.72 | 1.74 | 1.74 | 1.72 | 1.71 | 1.71 | 1.71 | 1.69 |
| 28 | 1.68 | 1.64 | 1.62 | 1.62 | 1.62 | 1.62 | 1.63 | 1.64 | 1.63 | 1.64 | 1.65 | 1.68 |
| 29 | 1.69 | 1.69 | 1.71 | 1.71 | 1.72 | 1.74 | 1.74 | 1.72 | 1.72 | 1.69 | 1.68 | 1.66 |
| 30 | 1.64 | 1.68 | 1.54 | 1.49 | 1.45 | 1.42 | 1.38 | 1.39 | 1.41 | 1.42 | 1.45 | 1.48 |
| 31 | 1.51 | 1.50 | 1.55 | 1.61 | 1.65 | 1.68 | 1.70 | 1.71 | 1.74 | 1.75 | 1.76 | 1.78 |
| Mean | 29.597 | 29.584 | 29.589 | 29.597 | 29.600 | 29.597 | 29.586 | 29.582 | 29.574 | 29.572 | 29.582 | 29.594 |

BAROGRAPH.

FEBRUARY, 1857.

28 inches +.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.76 | 1.75 | 1.74 | 1.71 | 1.70 | 1.66 | 1.62 | 1.56 | 1.49 | 1.45 | 1.41 | 1.38 |
| 2 | 1.34 | 1.29 | 1.28 | 1.28 | 1.29 | 1.31 | 1.32 | 1.35 | 1.38 | 1.42 | 1.49 | 1.56 |
| 3 | 1.59 | 1.62 | 1.66 | 1.74 | 1.79 | 1.83 | 1.86 | 1.91 | 1.92 | 1.94 | 1.99 | 2.02 |
| 4 | 2.03 | 2.03 | 2.05 | 2.06 | 2.08 | 2.10 | 2.08 | 2.05 | 2.03 | 2.01 | 1.97 | 1.95 |
| 5 | 1.92 | 1.86 | 1.83 | 1.81 | 1.79 | 1.77 | 1.75 | 1.74 | 1.71 | 1.69 | 1.70 | 1.71 |
| 6 | 1.71 | 1.69 | 1.69 | 1.68 | 1.68 | 1.67 | 1.65 | 1.61 | 1.61 | 1.59 | 1.58 | 1.57 |
| 7 | 1.55 | 1.52 | 1.52 | 1.52 | 1.51 | 1.52 | 1.49 | 1.48 | 1.47 | 1.46 | 1.46 | 1.46 |
| 8 | 1.45 | 1.45 | 1.44 | 1.45 | 1.45 | 1.46 | 1.45 | 1.42 | 1.42 | 1.39 | 1.39 | 1.35 |
| 9 | 1.34 | 1.28 | 1.28 | 1.25 | 1.24 | 1.24 | 1.24 | 1.24 | 1.31 | 1.39 | 1.45 | 1.49 |
| 10 | 1.50 | 1.48 | 1.48 | 1.51 | 1.52 | 1.56 | 1.58 | 1.58 | 1.59 | 1.62 | 1.65 | 1.69 |
| 11 | 1.71 | 1.71 | 1.72 | 1.76 | 1.78 | 1.88 | 1.92 | 2.01 | 2.05 | 2.09 | 2.13 | 2.18 |
| 12 | 2.19 | 2.19 | 2.19 | 2.20 | 2.20 | 2.21 | 2.19 | 2.18 | 2.15 | 2.13 | 2.13 | 2.14 |
| 13 | 2.13 | 2.10 | 2.08 | 2.08 | 2.09 | 2.09 | 2.10 | 2.09 | 2.08 | 2.08 | 2.10 | 2.10 |
| 14 | 2.10 | 2.05 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.02 | 1.99 | 1.98 | 1.99 | 1.98 |
| 15 | 1.95 | 1.93 | 1.92 | 1.90 | 1.92 | 1.93 | 1.93 | 1.93 | 1.91 | 1.91 | 1.92 | 1.92 |
| 16 | 1.90 | 1.86 | 1.85 | 1.86 | 1.88 | 1.88 | 1.86 | 1.85 | 1.82 | 1.81 | 1.82 | 1.83 |
| 17 | 1.81 | 1.78 | 1.78 | 1.79 | 1.79 | 1.79 | 1.79 | 1.78 | 1.76 | 1.76 | 1.79 | 1.81 |
| 18 | 1.81 | 1.79 | 1.79 | 1.82 | 1.85 | 1.86 | 1.88 | 1.86 | 1.88 | 1.91 | 1.93 | 1.95 |
| 19 | 1.96 | 1.96 | 1.96 | 1.98 | 1.99 | 2.00 | 1.99 | 1.98 | 1.98 | 1.98 | 1.99 | 2.00 |
| 20 | 1.99 | 1.98 | 1.96 | 1.98 | 2.01 | 2.02 | 2.05 | 2.06 | 2.05 | 2.05 | 2.08 | 2.08 |
| 21 | 2.08 | 2.06 | 2.06 | 2.08 | 2.09 | 2.10 | 2.10 | 2.09 | 2.07 | 2.06 | 2.08 | 2.08 |
| 22 | 2.05 | 2.01 | 1.99 | 1.99 | 2.02 | 2.02 | 2.03 | 2.03 | 2.05 | 2.05 | 2.09 | 2.10 |
| 23 | 2.12 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.09 | 2.08 | 2.08 | 2.08 | 2.08 |
| 24 | 2.03 | 2.00 | 1.96 | 1.98 | 1.99 | 1.98 | 1.98 | 1.98 | 1.96 | 1.95 | 1.98 | 1.99 |
| 25 | 1.99 | 2.01 | 2.03 | 2.08 | 2.13 | 2.18 | 2.21 | 2.22 | 2.25 | 2.27 | 2.32 | 2.33 |
| 26 | 2.33 | 2.32 | 2.30 | 2.30 | 2.30 | 2.29 | 2.30 | 2.27 | 2.26 | 2.25 | 2.27 | 2.27 |
| 27 | 2.25 | 2.25 | 2.24 | 2.25 | 2.27 | 2.29 | 2.30 | 2.29 | 2.29 | 2.30 | 2.33 | 2.35 |
| 28 | 2.35 | 2.33 | 2.32 | 2.33 | 2.36 | 2.37 | 2.37 | 2.37 | 2.36 | 2.36 | 2.37 | 2.40 |
| Mean | 29.890 | 29.871 | 29.865 | 29.874 | 29.887 | 29.898 | 29.899 | 29.893 | 29.888 | 29.892 | 29.911 | 29.919 |

BAROGRAPH.

MARCH, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | o h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 2.39 | 2.35 | 2.33 | 2.33 | 2.35 | 2.36 | 2.35 | 2.33 | 2.32 | 2.30 | 2.32 | 2.32 |
| 2 | 2.32 | 2.29 | 2.27 | 2.27 | 2.29 | 2.30 | 2.30 | 2.29 | 2.27 | 2.27 | 2.27 | 2.27 |
| 3 | 2.25 | 2.21 | 2.19 | 2.16 | 2.18 | 2.16 | 2.14 | 2.12 | 2.07 | 2.03 | 2.03 | 2.01 |
| 4 | 1.96 | 1.91 | 1.86 | 1.91 | 1.93 | 2.05 | 2.09 | 2.13 | 2.18 | 2.21 | 2.22 | 2.22 |
| 5 | 2.19 | 2.15 | 2.08 | 2.03 | 1.99 | 1.92 | 1.88 | 1.86 | 1.83 | 1.85 | 1.88 | 1.89 |
| 6 | 1.88 | 1.85 | 1.83 | 1.85 | 1.85 | 1.85 | 1.82 | 1.79 | 1.78 | 1.78 | 1.78 | 1.76 |
| 7 | 1.74 | 1.71 | 1.69 | 1.69 | 1.69 | 1.68 | 1.65 | 1.61 | 1.55 | 1.45 | 1.38 | 1.34 |
| 8 | 1.34 | 1.28 | 1.31 | 1.32 | 1.35 | 1.38 | 1.42 | 1.45 | 1.49 | 1.56 | 1.64 | 1.71 |
| 9 | 1.74 | 1.78 | 1.81 | 1.85 | 1.88 | 1.89 | 1.89 | 1.89 | 1.88 | 1.88 | 1.88 | 1.88 |
| 10 | 1.85 | 1.83 | 1.79 | 1.78 | 1.78 | 1.76 | 1.75 | 1.73 | 1.71 | 1.71 | 1.71 | 1.71 |
| 11 | 1.72 | 1.72 | 1.74 | 1.76 | 1.79 | 1.82 | 1.83 | 1.83 | 1.82 | 1.83 | 1.83 | 1.86 |
| 12 | 1.85 | 1.83 | 1.81 | 1.81 | 1.81 | 1.81 | 1.79 | 1.75 | 1.71 | 1.66 | 1.61 | 1.55 |
| 13 | 1.46 | 1.41 | 1.37 | 1.36 | 1.35 | 1.32 | 1.29 | 1.18 | 1.02 | 0.85 | 0.85 | 0.85 |
| 14 | 0.91 | 0.94 | 1.00 | 1.01 | 0.98 | 0.88 | 0.81 | 0.88 | 0.94 | 1.01 | 1.10 | 1.18 |
| 15 | 1.25 | 1.27 | 1.35 | 1.44 | 1.52 | 1.61 | 1.65 | 1.69 | 1.71 | 1.74 | 1.78 | 1.81 |
| 16 | 1.79 | 1.78 | 1.79 | 1.81 | 1.81 | 1.81 | 1.81 | 1.78 | 1.74 | 1.71 | 1.66 | 1.65 |
| 17 | 1.61 | 1.58 | 1.56 | 1.56 | 1.58 | 1.58 | 1.56 | 1.56 | 1.56 | 1.58 | 1.58 | 1.59 |
| 18 | 1.56 | 1.54 | 1.54 | 1.55 | 1.58 | 1.59 | 1.59 | 1.61 | 1.64 | 1.68 | 1.71 | 1.72 |
| 19 | 1.72 | 1.71 | 1.69 | 1.69 | 1.72 | 1.72 | 1.72 | 1.71 | 1.71 | 1.71 | 1.72 | 1.74 |
| 20 | 1.76 | 1.76 | 1.78 | 1.79 | 1.81 | 1.83 | 1.83 | 1.83 | 1.85 | 1.83 | 1.86 | 1.85 |
| 21 | 1.81 | 1.82 | 1.82 | 1.83 | 1.88 | 1.88 | 1.86 | 1.83 | 1.79 | 1.78 | 1.76 | 1.72 |
| 22 | 1.71 | 1.65 | 1.64 | 1.64 | 1.62 | 1.61 | 1.59 | 1.56 | 1.54 | 1.52 | 1.51 | 1.49 |
| 23 | 1.47 | 1.45 | 1.44 | 1.45 | 1.45 | 1.45 | 1.45 | 1.44 | 1.42 | 1.42 | 1.42 | 1.42 |
| 24 | 1.41 | 1.38 | 1.35 | 1.35 | 1.34 | 1.32 | 1.29 | 1.25 | 1.22 | 1.19 | 1.21 | 1.22 |
| 25 | 1.22 | 1.24 | 1.26 | 1.29 | 1.34 | 1.37 | 1.38 | 1.41 | 1.42 | 1.44 | 1.48 | 1.52 |
| 26 | 1.55 | 1.58 | 1.61 | 1.66 | 1.72 | 1.74 | 1.76 | 1.78 | 1.78 | 1.81 | 1.82 | 1.83 |
| 27 | 1.84 | 1.83 | 1.83 | 1.83 | 1.85 | 1.85 | 1.84 | 1.83 | 1.81 | 1.82 | 1.82 | 1.82 |
| 28 | 1.81 | 1.78 | 1.75 | 1.75 | 1.75 | 1.75 | 1.72 | 1.68 | 1.64 | 1.61 | 1.59 | 1.58 |
| 29 | 1.56 | 1.52 | 1.46 | 1.45 | 1.42 | 1.37 | 1.31 | 1.22 | 1.05 | 1.05 | 1.04 | 1.01 |
| 30 | 0.97 | 0.94 | 0.92 | 0.92 | 0.94 | 0.97 | 0.98 | 0.98 | 1.00 | 1.00 | 1.03 | 1.04 |
| 31 | 1.07 | 1.07 | 1.08 | 1.11 | 1.16 | 1.19 | 1.23 | 1.23 | 1.27 | 1.27 | 1.29 | 1.27 |
| Mean | 29.667 | 29.649 | 29.642 | 29.653 | 29.669 | 29.670 | 29.664 | 29.653 | 29.637 | 29.629 | 29.637 | 29.643 |

BAROGRAPHII.

APRIL, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | o h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.24 | 1.21 | 1.18 | 1.14 | 1.11 | 1.07 | 1.00 | 0.95 | 0.91 | 0.87 | 0.84 | 0.91 |
| 2 | 0.97 | 1.01 | 1.04 | 1.10 | 1.15 | 1.18 | 1.21 | 1.23 | 1.25 | 1.28 | 1.32 | 1.37 |
| 3 | 1.38 | 1.41 | 1.42 | 1.46 | 1.52 | 1.55 | 1.56 | 1.56 | 1.56 | 1.58 | 1.58 | 1.58 |
| 4 | 1.56 | 1.54 | 1.49 | 1.49 | 1.51 | 1.52 | 1.52 | 1.52 | 1.49 | 1.49 | 1.47 | 1.46 |
| 5 | 1.43 | 1.39 | 1.38 | 1.37 | 1.37 | 1.37 | 1.37 | 1.37 | 1.35 | 1.38 | 1.39 | 1.42 |
| 6 | 1.45 | 1.46 | 1.49 | 1.54 | 1.57 | 1.61 | 1.64 | 1.65 | 1.68 | 1.70 | 1.72 | 1.74 |
| 7 | 1.74 | 1.73 | 1.73 | 1.74 | 1.76 | 1.78 | 1.77 | 1.76 | 1.75 | 1.75 | 1.74 | 1.72 |
| 8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | (1.39) |
| 9 | 1.37 | 1.34 | 1.32 | 1.32 | 1.34 | 1.32 | 1.31 | 1.29 | 1.28 | 1.29 | 1.29 | 1.29 |
| 10 | 1.25 | 1.22 | 1.19 | 1.18 | 1.19 | 1.22 | 1.22 | 1.21 | 1.21 | 1.24 | 1.29 | 1.32 |
| 11 | 1.34 | 1.34 | 1.34 | 1.34 | 1.37 | 1.34 | 1.32 | 1.31 | 1.28 | 1.29 | 1.29 | 1.27 |
| 12 | 1.24 | 1.17 | 1.10 | 1.01 | 0.92 | 0.85 | 0.80 | 0.78 | 0.75 | 0.77 | 0.78 | 0.81 |
| 13 | 0.82 | 0.87 | 0.91 | 0.97 | 1.01 | 1.02 | 1.05 | 1.07 | 1.07 | 1.10 | 1.13 | 1.15 |
| 14 | 1.17 | 1.19 | 1.21 | 1.24 | 1.28 | 1.30 | 1.31 | 1.32 | 1.34 | 1.37 | 1.38 | 1.39 |
| 15 | 1.39 | 1.39 | 1.41 | 1.44 | 1.48 | 1.49 | 1.52 | 1.52 | 1.54 | 1.56 | 1.59 | 1.61 |
| 16 | 1.59 | 1.61 | 1.62 | 1.62 | 1.66 | 1.69 | 1.72 | 1.72 | 1.72 | 1.72 | 1.72 | 1.72 |
| 17 | 1.71 | 1.71 | 1.68 | 1.68 | 1.69 | 1.71 | 1.72 | 1.72 | 1.74 | 1.75 | 1.76 | 1.75 |
| 18 | 1.72 | 1.69 | 1.67 | 1.66 | 1.66 | 1.65 | 1.64 | 1.61 | 1.61 | 1.66 | 1.71 | 1.75 |
| 19 | 1.78 | 1.81 | 1.83 | 1.86 | 1.92 | 1.96 | 1.99 | 2.01 | 2.02 | 2.05 | 2.06 | 2.08 |
| 20 | 2.07 | 2.06 | 2.05 | 2.06 | 2.09 | 2.09 | 2.10 | 2.09 | 2.09 | 2.10 | 2.10 | 2.12 |
| 21 | 2.10 | 2.09 | 2.08 | 2.08 | 2.08 | 2.08 | 2.06 | 2.02 | 1.98 | 1.93 | 1.89 | 1.85 |
| 22 | 1.81 | 1.79 | 1.76 | 1.78 | 1.81 | 1.82 | 1.81 | 1.78 | 1.77 | 1.79 | 1.79 | 1.79 |
| 23 | 1.79 | 1.78 | 1.77 | 1.78 | 1.83 | 1.86 | 1.88 | 1.88 | 1.88 | 1.86 | 1.86 | 1.82 |
| 24 | 1.78 | 1.74 | 1.69 | 1.66 | 1.65 | 1.64 | 1.62 | 1.59 | 1.56 | 1.56 | 1.54 | 1.52 |
| 25 | 1.49 | 1.46 | 1.44 | 1.44 | 1.45 | 1.48 | 1.51 | 1.55 | 1.60 | 1.67 | 1.71 | 1.75 |
| 26 | 1.76 | 1.78 | 1.79 | 1.83 | 1.86 | 1.87 | 1.88 | 1.88 | 1.86 | 1.89 | 1.89 | 1.90 |
| 27 | 1.89 | 1.89 | 1.89 | 1.90 | 1.91 | 1.92 | 1.92 | 1.92 | 1.91 | 1.92 | 1.92 | 1.89 |
| 28 | 1.88 | 1.86 | 1.83 | 1.85 | 1.85 | 1.86 | 1.86 | 1.85 | 1.85 | 1.88 | 1.89 | 1.89 |
| 29 | 1.88 | 1.86 | 1.86 | 1.88 | 1.89 | 1.90 | 1.91 | 1.89 | 1.89 | 1.91 | 1.91 | 1.91 |
| 30 | 1.90 | 1.89 | 1.89 | 1.90 | 1.93 | 1.93 | 1.93 | 1.93 | 1.92 | 1.93 | 1.93 | 1.93 |
| Mean | 29.568 | 29.564 | 29.554 | 29.552 | 29.582 | 29.588 | 29.591 | 29.585 | 29.580 | 29.595 | 29.603 | 29.609 |

April 8. 22^h. An eye observation. The carriage had not moved in the Camera.9. 0^h. Interpolated.

BAROGRAPH.

MAY, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | o h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.93 | 1.92 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 | 1.89 | 1.89 | 1.91 | 1.92 | 1.93 |
| 2 | 1.93 | 1.92 | 1.91 | 1.92 | 1.93 | 1.95 | 1.96 | 1.96 | 1.96 | 1.98 | 1.98 | 1.98 |
| 3 | 1.96 | 1.95 | 1.95 | 1.95 | 1.98 | 1.99 | 2.01 | 1.99 | 1.98 | 1.99 | 2.01 | 1.99 |
| 4 | 1.98 | 1.98 | 1.96 | 1.98 | 2.01 | 2.02 | 2.03 | 2.05 | 2.05 | 2.06 | 2.08 | 2.08 |
| 5 | 2.08 | 2.07 | 2.06 | 2.05 | 2.06 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.06 |
| 6 | 2.05 | 2.04 | 2.02 | 2.02 | 2.03 | 2.05 | 2.03 | 2.03 | 2.03 | 2.05 | 2.05 | 2.03 |
| 7 | 1.99 | 1.96 | 1.95 | 1.93 | 1.95 | 1.94 | 1.93 | 1.91 | 1.89 | 1.88 | 1.88 | 1.85 |
| 8 | 1.82 | 1.79 | 1.76 | 1.75 | 1.76 | 1.78 | 1.76 | 1.74 | 1.71 | 1.69 | 1.68 | 1.65 |
| 9 | 1.61 | 1.58 | 1.56 | 1.56 | 1.58 | 1.61 | 1.59 | 1.58 | 1.56 | 1.55 | 1.54 | 1.52 |
| 10 | 1.52 | 1.51 | 1.49 | 1.49 | 1.49 | 1.49 | 1.48 | 1.46 | 1.46 | 1.46 | 1.48 | 1.51 |
| 11 | 1.52 | 1.52 | 1.52 | 1.54 | 1.58 | 1.62 | 1.64 | 1.65 | 1.66 | 1.69 | 1.74 | 1.76 |
| 12 | 1.76 | 1.78 | 1.78 | 1.79 | 1.82 | 1.83 | 1.85 | 1.85 | 1.86 | 1.88 | 1.89 | 1.89 |
| 13 | 1.86 | 1.83 | 1.82 | 1.81 | 1.81 | 1.81 | 1.79 | 1.78 | 1.78 | 1.78 | 1.79 | 1.79 |
| 14 | 1.78 | 1.76 | 1.75 | 1.76 | 1.78 | 1.81 | 1.81 | 1.81 | 1.81 | 1.83 | 1.86 | 1.86 |
| 15 | 1.88 | 1.88 | 1.88 | 1.89 | 1.91 | 1.93 | 1.95 | 1.93 | 1.95 | 1.96 | 1.96 | 1.96 |
| 16 | 1.95 | 1.93 | 1.91 | 1.92 | 1.92 | 1.92 | 1.92 | 1.91 | 1.91 | 1.92 | 1.92 | 1.92 |
| 17 | 1.91 | 1.88 | 1.85 | 1.85 | 1.86 | 1.88 | 1.88 | 1.86 | 1.86 | 1.86 | 1.85 | 1.83 |
| 18 | 1.81 | 1.79 | 1.78 | 1.76 | 1.76 | 1.78 | 1.78 | 1.76 | 1.75 | 1.76 | 1.78 | 1.79 |
| 19 | 1.76 | 1.75 | 1.74 | 1.74 | 1.72 | 1.72 | 1.72 | 1.69 | 1.68 | 1.66 | 1.65 | 1.64 |
| 20 | 1.61 | 1.56 | 1.54 | 1.54 | 1.54 | 1.52 | 1.51 | 1.49 | 1.48 | 1.48 | 1.46 | 1.46 |
| 21 | 1.46 | 1.45 | 1.46 | 1.49 | 1.54 | 1.58 | 1.61 | 1.62 | 1.65 | 1.66 | 1.68 | 1.67 |
| 22 | 1.67 | 1.66 | 1.65 | 1.64 | 1.64 | 1.64 | 1.60 | 1.58 | 1.55 | 1.52 | 1.46 | 1.42 |
| 23 | 1.39 | 1.35 | 1.32 | 1.28 | 1.28 | 1.27 | 1.27 | 1.25 | 1.24 | 1.25 | 1.27 | 1.29 |
| 24 | 1.31 | 1.31 | 1.32 | 1.34 | 1.37 | 1.39 | 1.38 | 1.37 | 1.35 | 1.33 | 1.32 | 1.29 |
| 25 | 1.25 | 1.21 | 1.17 | 1.15 | 1.15 | 1.17 | 1.21 | 1.22 | 1.24 | 1.28 | 1.31 | 1.32 |
| 26 | 1.37 | 1.39 | 1.41 | 1.42 | 1.45 | 1.48 | 1.49 | 1.49 | 1.49 | 1.52 | 1.55 | 1.56 |
| 27 | 1.55 | 1.55 | 1.55 | 1.58 | 1.61 | 1.61 | 1.61 | 1.61 | 1.61 | 1.61 | 1.61 | 1.62 |
| 28 | 1.62 | 1.61 | 1.59 | 1.61 | 1.64 | 1.66 | 1.68 | 1.68 | 1.69 | 1.72 | 1.74 | 1.75 |
| 29 | 1.76 | 1.76 | 1.76 | 1.77 | 1.79 | 1.81 | 1.82 | 1.82 | 1.82 | 1.83 | 1.85 | 1.85 |
| 30 | 1.85 | 1.85 | 1.85 | 1.85 | 1.86 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 |
| 31 | 1.86 | 1.85 | 1.83 | 1.85 | 1.86 | 1.89 | 1.89 | 1.86 | 1.85 | 1.85 | 1.83 | 1.82 |
| Mean | 29.735 | 29.722 | 29.711 | 29.714 | 29.728 | 29.742 | 29.743 | 29.735 | 29.732 | 29.739 | 29.743 | 29.742 |

BAROGRAPH.

JUNE, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.79 | 1.78 | 1.75 | 1.75 | 1.75 | 1.76 | 1.75 | 1.74 | 1.71 | 1.69 | 1.68 | 1.68 |
| 2 | 1.66 | 1.66 | 1.65 | 1.64 | 1.65 | 1.68 | 1.68 | 1.68 | 1.69 | 1.71 | 1.72 | 1.74 |
| 3 | 1.74 | 1.75 | 1.76 | 1.81 | 1.82 | 1.85 | 1.85 | 1.86 | 1.86 | 1.89 | 1.91 | 1.92 |
| 4 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 | 1.92 | 1.91 | 1.89 | 1.88 | 1.88 | 1.86 | 1.85 |
| 5 | 1.83 | 1.82 | 1.81 | 1.82 | 1.82 | 1.82 | 1.81 | 1.79 | 1.81 | 1.82 | 1.85 | 1.85 |
| 6 | 1.85 | 1.83 | 1.79 | 1.81 | 1.81 | 1.81 | 1.78 | 1.75 | 1.71 | 1.66 | 1.65 | 1.61 |
| 7 | 1.56 | 1.55 | 1.51 | 1.49 | 1.46 | 1.45 | 1.46 | 1.46 | 1.48 | 1.49 | 1.51 | 1.52 |
| 8 | 1.52 | 1.52 | 1.52 | 1.52 | 1.54 | 1.55 | 1.55 | 1.56 | 1.58 | 1.59 | 1.61 | 1.61 |
| 9 | 1.59 | 1.56 | 1.52 | 1.46 | 1.42 | 1.41 | 1.38 | 1.37 | 1.35 | 1.35 | 1.35 | 1.35 |
| 10 | 1.34 | 1.34 | 1.35 | 1.38 | 1.44 | 1.48 | 1.52 | 1.55 | 1.56 | 1.61 | 1.64 | 1.65 |
| 11 | 1.69 | 1.72 | 1.75 | 1.79 | 1.83 | 1.88 | 1.91 | 1.92 | 1.93 | 1.95 | 1.96 | 1.99 |
| 12 | 1.99 | 1.99 | 1.99 | 2.02 | 2.05 | 2.09 | 2.10 | 2.10 | 2.10 | 2.12 | 2.12 | 2.10 |
| 13 | 2.09 | 2.06 | 2.03 | 2.01 | 2.01 | 2.02 | 2.01 | 1.99 | 1.98 | 1.96 | 1.95 | 1.93 |
| 14 | 1.89 | 1.85 | 1.82 | 1.81 | 1.81 | 1.81 | 1.79 | 1.76 | 1.74 | 1.74 | 1.74 | 1.73 |
| 15 | 1.72 | 1.71 | 1.71 | 1.72 | 1.75 | 1.76 | 1.76 | 1.76 | 1.75 | 1.76 | 1.76 | 1.76 |
| 16 | 1.76 | 1.76 | 1.79 | 1.79 | 1.82 | 1.83 | 1.83 | 1.84 | 1.85 | 1.86 | 1.88 | 1.89 |
| 17 | 1.89 | 1.90 | 1.91 | 1.92 | 1.95 | 1.99 | 1.99 | 1.99 | 1.99 | 2.01 | 2.01 | 2.02 |
| 18 | 2.01 | 1.98 | 1.95 | 1.96 | 1.96 | 1.98 | 1.98 | 1.94 | 1.93 | 1.93 | 1.91 | 1.88 |
| 19 | 1.85 | 1.80 | 1.77 | 1.76 | 1.78 | 1.75 | 1.72 | 1.74 | 1.72 | 1.76 | 1.78 | 1.76 |
| 20 | 1.76 | 1.75 | 1.74 | 1.72 | 1.74 | 1.72 | 1.74 | 1.71 | 1.72 | 1.74 | 1.75 | 1.76 |
| 21 | 1.76 | 1.76 | 1.77 | 1.79 | 1.83 | 1.83 | 1.86 | 1.86 | 1.89 | 1.92 | 1.95 | 1.95 |
| 22 | 1.95 | 1.95 | 1.95 | 1.95 | 1.96 | 1.98 | 1.99 | 1.99 | 1.99 | 2.01 | 2.02 | 2.02 |
| 23 | 2.01 | 2.01 | 1.99 | 1.99 | 2.01 | 2.03 | 2.04 | 2.05 | 2.06 | 2.07 | 2.08 | 2.08 |
| 24 | 2.08 | 2.06 | 2.06 | 2.06 | 2.09 | 2.13 | 2.15 | 2.15 | 2.16 | 2.18 | 2.19 | 2.20 |
| 25 | 2.19 | 2.16 | 2.15 | 2.15 | 2.17 | 2.18 | 2.19 | 2.18 | 2.18 | 2.17 | 2.16 | 2.14 |
| 26 | 2.12 | 2.09 | 2.05 | 2.03 | 2.02 | 2.02 | 2.02 | 1.99 | 1.98 | 1.96 | 1.95 | 1.93 |
| 27 | 1.91 | 1.88 | 1.85 | 1.83 | 1.82 | 1.82 | 1.81 | 1.77 | 1.74 | 1.74 | 1.71 | 1.68 |
| 28 | 1.62 | 1.58 | 1.56 | 1.55 | 1.55 | 1.52 | 1.54 | 1.51 | 1.51 | 1.51 | 1.51 | 1.49 |
| 29 | 1.46 | 1.44 | 1.42 | 1.42 | 1.41 | 1.40 | 1.38 | 1.35 | 1.32 | 1.32 | 1.32 | 1.32 |
| 30 | 1.32 | 1.32 | 1.31 | 1.34 | 1.37 | 1.41 | 1.42 | 1.42 | 1.45 | 1.46 | 1.51 | 1.54 |
| Mean | 29.796 | 29.784 | 29.771 | 29.773 | 29.785 | 29.800 | 29.796 | 29.789 | 29.788 | 29.794 | 29.800 | 29.799 |

BAROGRAPH.

JULY, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.58 | 1.61 | 1.65 | 1.68 | 1.72 | 1.76 | 1.79 | 1.79 | 1.81 | 1.82 | 1.85 | 1.85 |
| 2 | 1.85 | 1.85 | 1.83 | 1.82 | 1.83 | 1.83 | 1.83 | 1.81 | 1.81 | 1.79 | 1.79 | 1.78 |
| 3 | 1.76 | 1.75 | 1.74 | 1.72 | 1.71 | 1.69 | 1.67 | 1.64 | 1.63 | 1.62 | 1.63 | 1.62 |
| 4 | 1.61 | 1.62 | 1.62 | 1.61 | 1.61 | 1.61 | 1.61 | 1.59 | 1.59 | 1.59 | 1.61 | 1.58 |
| 5 | 1.55 | 1.52 | 1.46 | 1.42 | 1.42 | 1.43 | 1.42 | 1.42 | 1.42 | 1.44 | 1.49 | 1.51 |
| 6 | 1.51 | 1.50 | 1.49 | 1.49 | 1.54 | 1.57 | 1.59 | 1.61 | 1.65 | 1.69 | 1.71 | 1.72 |
| 7 | 1.73 | 1.75 | 1.75 | 1.74 | 1.75 | 1.76 | 1.76 | 1.76 | 1.75 | 1.76 | 1.76 | 1.78 |
| 8 | 1.76 | 1.77 | 1.75 | 1.74 | 1.75 | 1.75 | 1.75 | 1.72 | 1.71 | 1.71 | 1.71 | 1.71 |
| 9 | 1.71 | 1.71 | 1.69 | 1.69 | 1.71 | 1.73 | 1.72 | 1.72 | 1.71 | 1.72 | 1.72 | 1.74 |
| 10 | 1.74 | 1.74 | 1.74 | 1.74 | 1.75 | 1.76 | 1.78 | 1.78 | 1.79 | 1.81 | 1.83 | 1.85 |
| 11 | 1.86 | 1.91 | 1.91 | 1.92 | 1.93 | 1.98 | 1.99 | 2.01 | 2.02 | 2.04 | 2.05 | 2.06 |
| 12 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.13 | 2.16 |
| 13 | 2.13 | 2.12 | 2.12 | 2.10 | 2.10 | 2.13 | 2.13 | 2.13 | 2.12 | 2.13 | 2.13 | 2.13 |
| 14 | 2.10 | 2.08 | 2.03 | 2.01 | 1.99 | 2.01 | 1.99 | 1.96 | 1.95 | 1.92 | 1.91 | 1.88 |
| 15 | 1.82 | 1.79 | 1.76 | 1.75 | 1.74 | 1.74 | 1.72 | 1.71 | 1.68 | 1.66 | 1.66 | 1.66 |
| 16 | 1.65 | 1.65 | 1.68 | 1.69 | 1.72 | 1.74 | 1.75 | 1.75 | 1.78 | 1.82 | 1.85 | 1.88 |
| 17 | 1.88 | 1.88 | 1.88 | 1.88 | 1.91 | 1.93 | 1.95 | 1.95 | 1.96 | 1.98 | 1.99 | 2.01 |
| 18 | 2.01 | 2.01 | 1.99 | 2.01 | 2.00 | 2.02 | 2.01 | 1.99 | 1.97 | 1.98 | 1.98 | 1.91 |
| 19 | 1.91 | 1.89 | 1.85 | 1.83 | 1.82 | 1.81 | 1.79 | 1.78 | 1.76 | 1.76 | 1.79 | 1.81 |
| 20 | 1.79 | 1.79 | 1.79 | 1.79 | 1.81 | 1.83 | 1.85 | 1.86 | 1.86 | 1.87 | 1.88 | 1.88 |
| 21 | 1.87 | 1.86 | 1.83 | 1.82 | 1.82 | 1.82 | 1.79 | 1.76 | 1.74 | 1.75 | 1.75 | 1.75 |
| 22 | 1.74 | 1.74 | 1.74 | 1.75 | 1.78 | 1.81 | 1.81 | 1.79 | 1.79 | 1.80 | 1.81 | 1.81 |
| 23 | 1.80 | 1.79 | 1.76 | 1.75 | 1.76 | 1.76 | 1.75 | 1.71 | 1.71 | 1.69 | 1.68 | 1.66 |
| 24 | 1.65 | 1.64 | 1.64 | 1.62 | 1.61 | 1.61 | 1.59 | 1.54 | 1.52 | 1.51 | 1.55 | 1.58 |
| 25 | 1.60 | 1.62 | 1.64 | 1.66 | 1.71 | 1.74 | 1.75 | 1.76 | 1.75 | 1.77 | 1.78 | 1.76 |
| 26 | 1.78 | 1.76 | 1.76 | 1.76 | 1.78 | 1.78 | 1.76 | 1.75 | 1.71 | 1.71 | 1.69 | 1.69 |
| 27 | 1.68 | 1.66 | 1.65 | 1.65 | 1.66 | 1.68 | 1.68 | 1.68 | 1.64 | 1.66 | 1.69 | 1.72 |
| 28 | 1.75 | 1.76 | 1.79 | 1.82 | 1.86 | 1.91 | 1.93 | 1.93 | 1.95 | 1.96 | 1.98 | 1.98 |
| 29 | 1.95 | 1.92 | 1.88 | 1.86 | 1.86 | 1.86 | 1.85 | 1.83 | 1.82 | 1.83 | 1.83 | 1.83 |
| 30 | 1.81 | 1.80 | 1.80 | 1.80 | 1.82 | 1.83 | 1.82 | 1.82 | 1.82 | 1.83 | 1.85 | 1.85 |
| 31 | 1.85 | 1.85 | 1.85 | 1.85 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 | 1.88 | 1.88 |
| Mean | 29.791 | 29.788 | 29.778 | 29.776 | 29.786 | 29.800 | 29.800 | 29.791 | 29.786 | 29.793 | 29.805 | 29.806 |

BAROGRAPH.

AUGUST, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.87 | 1.86 | 1.85 | 1.85 | 1.86 | 1.87 | 1.88 | 1.88 | 1.88 | 1.89 | 1.90 | 1.91 |
| 2 | 1.91 | 1.91 | 1.88 | 1.86 | 1.88 | 1.88 | 1.88 | 1.85 | 1.85 | 1.85 | 1.83 | 1.82 |
| 3 | 1.76 | 1.71 | 1.69 | 1.68 | 1.69 | 1.69 | 1.69 | 1.69 | 1.68 | 1.69 | 1.71 | 1.72 |
| 4 | 1.72 | 1.75 | 1.74 | 1.72 | 1.75 | 1.75 | 1.74 | 1.73 | 1.72 | 1.71 | 1.71 | 1.69 |
| 5 | 1.68 | 1.65 | 1.64 | 1.62 | 1.62 | 1.62 | 1.61 | 1.56 | 1.54 | 1.54 | 1.54 | 1.53 |
| 6 | 1.52 | 1.52 | 1.52 | 1.54 | 1.54 | 1.54 | 1.51 | 1.49 | 1.48 | 1.49 | 1.49 | 1.49 |
| 7 | 1.49 | 1.48 | 1.46 | 1.46 | 1.45 | 1.46 | 1.46 | 1.46 | 1.46 | 1.47 | 1.49 | 1.49 |
| 8 | 1.49 | 1.49 | 1.49 | 1.49 | 1.51 | 1.52 | 1.54 | 1.54 | 1.55 | 1.56 | 1.59 | 1.61 |
| 9 | 1.61 | 1.63 | 1.66 | 1.69 | 1.73 | 1.76 | 1.79 | 1.81 | 1.84 | 1.88 | 1.88 | 1.91 |
| 10 | 1.90 | 1.90 | 1.89 | 1.89 | 1.91 | 1.93 | 1.93 | 1.92 | 1.91 | 1.92 | 1.93 | 1.93 |
| 11 | 1.92 | 1.92 | 1.91 | 1.93 | 1.93 | 1.95 | 1.96 | 1.95 | 1.95 | 1.96 | 1.96 | 1.93 |
| 12 | 1.92 | 1.89 | 1.86 | 1.85 | 1.84 | 1.85 | 1.83 | 1.81 | 1.79 | 1.78 | 1.76 | 1.74 |
| 13 | 1.69 | 1.66 | 1.62 | 1.58 | 1.56 | 1.59 | 1.55 | 1.52 | 1.51 | 1.52 | 1.51 | 1.52 |
| 14 | 1.52 | 1.51 | 1.49 | 1.52 | 1.49 | 1.54 | 1.54 | 1.54 | 1.54 | 1.56 | 1.58 | 1.61 |
| 15 | 1.62 | 1.62 | 1.64 | 1.65 | 1.69 | 1.69 | 1.66 | 1.65 | 1.62 | 1.62 | 1.65 | 1.65 |
| 16 | 1.65 | 1.66 | 1.68 | 1.71 | 1.75 | 1.79 | 1.81 | 1.79 | 1.79 | 1.81 | 1.82 | 1.82 |
| 17 | 1.82 | 1.82 | 1.82 | 1.82 | 1.85 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 | 1.89 | 1.91 |
| 18 | 1.91 | 1.91 | 1.91 | 1.91 | 1.93 | 1.93 | 1.95 | 1.93 | 1.93 | 1.95 | 1.96 | 1.98 |
| 19 | 1.96 | 1.96 | 1.95 | 1.96 | 1.96 | 1.96 | 1.96 | 1.95 | 1.95 | 1.95 | 1.95 | 1.96 |
| 20 | 1.96 | 1.96 | 1.93 | 1.92 | 1.95 | 1.98 | 1.96 | 1.96 | 1.95 | 1.96 | 1.96 | 1.95 |
| 21 | 1.92 | 1.88 | 1.86 | 1.85 | 1.85 | 1.86 | 1.86 | 1.85 | 1.83 | 1.82 | 1.82 | 1.81 |
| 22 | 1.80 | 1.75 | 1.72 | 1.71 | 1.72 | 1.71 | 1.69 | 1.66 | 1.65 | 1.65 | 1.64 | 1.64 |
| 23 | 1.61 | 1.56 | 1.55 | 1.56 | 1.56 | 1.55 | 1.54 | 1.54 | 1.52 | 1.54 | 1.55 | 1.56 |
| 24 | 1.56 | 1.56 | 1.56 | 1.59 | 1.62 | 1.64 | 1.66 | 1.68 | 1.69 | 1.72 | 1.76 | 1.81 |
| 25 | 1.82 | 1.85 | 1.86 | 1.89 | 1.95 | 1.98 | 2.01 | 2.02 | 2.03 | 2.05 | 2.08 | 2.09 |
| 26 | 2.09 | 2.08 | 2.08 | 2.08 | 2.10 | 2.10 | 2.11 | 2.13 | 2.13 | 2.13 | 2.14 | 2.13 |
| 27 | 2.12 | 2.09 | 2.08 | 2.08 | 2.09 | 2.09 | 2.10 | 2.10 | 2.10 | 2.10 | 2.12 | 2.11 |
| 28 | 2.09 | 2.08 | 2.06 | 2.06 | 2.08 | 2.08 | 2.06 | 2.05 | 2.03 | 2.03 | 2.02 | 2.01 |
| 29 | 1.98 | 1.96 | 1.93 | 1.92 | 1.92 | 1.92 | 1.91 | 1.88 | 1.87 | 1.86 | 1.86 | 1.85 |
| 30 | 1.82 | 1.80 | 1.78 | 1.78 | 1.79 | 1.79 | 1.79 | 1.78 | 1.76 | 1.78 | 1.78 | 1.78 |
| 31 | 1.78 | 1.76 | 1.75 | 1.75 | 1.76 | 1.76 | 1.76 | 1.75 | 1.72 | 1.71 | 1.71 | 1.71 |
| Mean | 29.791 | 29.779 | 29.770 | 29.770 | 29.786 | 29.796 | 29.793 | 29.789 | 29.779 | 29.786 | 29.793 | 29.796 |

BAROGRAPH.

SEPTEMBER, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | o h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.71 | 1.69 | 1.68 | 1.65 | 1.65 | 1.64 | 1.61 | 1.55 | 1.49 | 1.45 | 1.44 | 1.44 |
| 2 | 1.44 | 1.42 | 1.42 | 1.39 | 1.38 | 1.38 | 1.38 | 1.37 | 1.34 | 1.31 | 1.29 | 1.31 |
| 3 | 1.30 | 1.29 | 1.29 | 1.31 | 1.34 | 1.35 | 1.35 | 1.34 | 1.32 | 1.32 | 1.32 | 1.35 |
| 4 | 1.35 | 1.36 | 1.37 | 1.38 | 1.41 | 1.42 | 1.44 | 1.45 | 1.45 | 1.48 | 1.51 | 1.53 |
| 5 | 1.55 | 1.56 | 1.56 | 1.58 | 1.61 | 1.63 | 1.64 | 1.64 | 1.62 | 1.64 | 1.65 | 1.66 |
| 6 | 1.66 | 1.65 | 1.65 | 1.65 | 1.69 | 1.69 | 1.70 | 1.69 | 1.68 | 1.68 | 1.69 | 1.71 |
| 7 | 1.68 | 1.65 | 1.64 | 1.62 | 1.62 | 1.59 | 1.55 | 1.49 | 1.42 | 1.38 | 1.37 | 1.37 |
| 8 | 1.32 | 1.28 | 1.22 | 1.22 | 1.25 | 1.27 | 1.28 | 1.29 | 1.32 | 1.35 | 1.37 | 1.37 |
| 9 | 1.35 | 1.34 | 1.34 | 1.34 | 1.37 | 1.37 | 1.37 | 1.37 | 1.38 | 1.43 | 1.46 | 1.52 |
| 10 | 1.53 | 1.51 | 1.49 | 1.49 | 1.49 | 1.51 | 1.47 | 1.45 | 1.44 | 1.42 | 1.42 | 1.43 |
| 11 | 1.42 | 1.42 | 1.41 | 1.39 | 1.41 | 1.41 | 1.39 | 1.40 | 1.41 | 1.44 | 1.45 | 1.46 |
| 12 | 1.46 | 1.46 | 1.48 | 1.49 | 1.52 | 1.54 | 1.55 | 1.58 | 1.59 | 1.64 | 1.68 | 1.71 |
| 13 | 1.74 | 1.74 | 1.74 | 1.74 | 1.76 | 1.78 | 1.79 | 1.79 | 1.78 | 1.79 | 1.81 | 1.82 |
| 14 | 1.83 | 1.84 | 1.85 | 1.86 | 1.91 | 1.91 | 1.95 | 1.95 | 1.95 | 1.95 | 1.98 | 1.99 |
| 15 | 2.00 | 1.99 | 1.99 | 2.01 | 2.02 | 2.02 | 2.03 | 2.03 | 2.02 | 2.03 | 2.05 | 2.06 |
| 16 | 2.05 | 2.02 | 2.01 | 2.01 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.05 | 2.05 |
| 17 | 2.03 | 2.02 | 2.01 | 2.01 | 2.02 | 2.03 | 2.02 | 2.01 | 2.01 | 2.02 | 2.03 | 2.04 |
| 18 | 2.03 | 2.02 | 2.03 | 2.05 | 2.09 | 2.12 | 2.13 | 2.16 | 2.18 | 2.21 | 2.21 | 2.22 |
| 19 | 2.22 | 2.22 | 2.21 | 2.21 | 2.23 | 2.23 | 2.23 | 2.23 | 2.22 | 2.22 | 2.22 | 2.22 |
| 20 | 2.21 | 2.19 | 2.16 | 2.15 | 2.15 | 2.16 | 2.15 | 2.13 | 2.11 | 2.10 | 2.10 | 2.10 |
| 21 | 2.07 | 2.06 | 2.05 | 2.05 | 2.06 | 2.06 | 2.06 | 2.05 | 2.03 | 2.05 | 2.05 | 2.06 |
| 22 | 2.03 | 2.01 | 1.99 | 1.98 | 1.99 | 1.99 | 1.98 | 1.95 | 1.93 | 1.92 | 1.93 | 1.92 |
| 23 | 1.89 | 1.86 | 1.83 | 1.81 | 1.80 | 1.76 | 1.74 | 1.71 | 1.68 | 1.66 | 1.66 | 1.65 |
| 24 | 1.65 | 1.62 | 1.61 | 1.62 | 1.64 | 1.64 | 1.61 | 1.59 | 1.59 | 1.59 | 1.61 | 1.61 |
| 25 | 1.61 | 1.62 | 1.64 | 1.66 | 1.69 | 1.71 | 1.72 | 1.72 | 1.74 | 1.75 | 1.76 | 1.76 |
| 26 | 1.75 | 1.71 | 1.69 | 1.71 | 1.71 | 1.70 | 1.68 | 1.65 | 1.62 | 1.61 | 1.61 | 1.62 |
| 27 | 1.62 | 1.61 | 1.60 | 1.62 | 1.64 | 1.64 | 1.62 | 1.61 | 1.62 | 1.62 | 1.64 | 1.65 |
| 28 | 1.66 | 1.65 | 1.67 | 1.71 | 1.75 | 1.78 | 1.81 | 1.82 | 1.83 | 1.86 | 1.89 | 1.91 |
| 29 | 1.91 | 1.91 | 1.89 | 1.91 | 1.92 | 1.92 | 1.89 | 1.88 | 1.83 | 1.82 | 1.82 | 1.82 |
| 30 | 1.79 | 1.76 | 1.75 | 1.78 | 1.79 | 1.81 | 1.81 | 1.79 | 1.81 | 1.82 | 1.86 | 1.86 |
| Mean | 29.729 | 29.717 | 29.708 | 29.713 | 29.731 | 29.736 | 29.732 | 29.723 | 29.715 | 29.720 | 29.731 | 29.741 |

BAROGRAPH.

OCTOBER, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.86 | 1.86 | 1.85 | 1.87 | 1.91 | 1.92 | 1.92 | 1.93 | 1.95 | 1.98 | 2.01 | 2.02 |
| 2 | 2.01 | 1.98 | 1.93 | 1.92 | 1.91 | 1.86 | 1.83 | 1.81 | 1.79 | 1.79 | 1.79 | 1.79 |
| 3 | 1.77 | 1.75 | 1.72 | 1.71 | 1.69 | 1.66 | 1.62 | 1.59 | 1.55 | 1.54 | 1.55 | 1.56 |
| 4 | 1.54 | 1.51 | 1.49 | 1.49 | 1.48 | 1.48 | 1.46 | 1.46 | 1.46 | 1.46 | 1.49 | 1.49 |
| 5 | 1.46 | 1.46 | 1.47 | 1.48 | 1.49 | 1.48 | 1.46 | 1.45 | 1.45 | 1.46 | 1.51 | 1.54 |
| 6 | 1.55 | 1.55 | 1.56 | 1.56 | 1.56 | 1.54 | 1.49 | 1.44 | 1.36 | 1.29 | 1.24 | 1.15 |
| 7 | 1.05 | 0.94 | 0.85 | 0.82 | 0.83 | 0.84 | 0.81 | 0.80 | 0.77 | 0.75 | 0.73 | 0.67 |
| 8 | 0.64 | 0.65 | 0.68 | 0.80 | 0.90 | 0.94 | 0.98 | 1.01 | 1.02 | 1.04 | 1.07 | 1.10 |
| 9 | 1.17 | 1.21 | 1.25 | 1.31 | 1.37 | 1.41 | 1.44 | 1.46 | 1.49 | 1.52 | 1.56 | 1.59 |
| 10 | 1.60 | 1.61 | 1.62 | 1.65 | 1.66 | 1.65 | 1.64 | 1.61 | 1.61 | 1.62 | 1.66 | 1.71 |
| 11 | 1.72 | 1.74 | 1.76 | 1.79 | 1.82 | 1.85 | 1.87 | 1.88 | 1.91 | 1.91 | 1.93 | 1.95 |
| 12 | 1.96 | 1.95 | 1.96 | 1.96 | 1.98 | 1.99 | 2.00 | 1.99 | 1.99 | 2.01 | 2.03 | 2.05 |
| 13 | 2.02 | 2.02 | 2.02 | 2.02 | 2.03 | 2.02 | 2.02 | 2.01 | 1.99 | 1.99 | 2.01 | 1.99 |
| 14 | 1.96 | 1.94 | 1.92 | 1.92 | 1.92 | 1.92 | 1.91 | 1.89 | 1.88 | 1.87 | 1.89 | 1.89 |
| 15 | 1.87 | 1.85 | 1.85 | 1.85 | 1.86 | 1.86 | 1.85 | 1.83 | 1.82 | 1.82 | 1.83 | 1.82 |
| 16 | 1.81 | 1.79 | 1.78 | 1.78 | 1.78 | 1.76 | 1.75 | 1.72 | 1.72 | 1.71 | 1.72 | 1.71 |
| 17 | 1.69 | 1.66 | 1.65 | 1.65 | 1.65 | 1.62 | 1.59 | 1.55 | 1.52 | 1.49 | 1.47 | 1.45 |
| 18 | 1.59 | 1.54 | 1.29 | 1.29 | 1.28 | 1.26 | 1.27 | 1.27 | 1.29 | 1.32 | 1.37 | 1.40 |
| 19 | 1.42 | 1.44 | 1.47 | 1.54 | 1.58 | 1.59 | 1.61 | 1.63 | 1.65 | 1.66 | 1.69 | 1.69 |
| 20 | 1.68 | 1.65 | 1.64 | 1.65 | 1.66 | 1.64 | 1.62 | 1.61 | 1.59 | 1.59 | 1.58 | 1.58 |
| 21 | 1.56 | 1.52 | 1.51 | 1.52 | 1.52 | 1.51 | 1.49 | 1.48 | 1.48 | 1.48 | 1.49 | 1.49 |
| 22 | 1.49 | 1.49 | 1.48 | 1.46 | 1.49 | 1.54 | 1.58 | 1.61 | 1.65 | 1.69 | 1.75 | 1.75 |
| 23 | 1.76 | 1.79 | 1.81 | 1.86 | 1.91 | 1.93 | 1.93 | 1.92 | 1.92 | 1.93 | 1.95 | 1.98 |
| 24 | 1.96 | 1.93 | 1.91 | 1.91 | 1.89 | 1.89 | 1.85 | 1.83 | 1.81 | 1.75 | 1.75 | 1.71 |
| 25 | 1.68 | 1.66 | 1.64 | 1.68 | 1.69 | 1.71 | 1.69 | 1.69 | 1.71 | 1.69 | 1.68 | 1.66 |
| 26 | 1.64 | 1.62 | 1.61 | 1.59 | 1.58 | 1.56 | 1.54 | 1.52 | 1.51 | 1.50 | 1.52 | 1.54 |
| 27 | 1.52 | 1.52 | 1.55 | 1.59 | 1.62 | 1.66 | 1.69 | 1.71 | 1.72 | 1.75 | 1.78 | 1.81 |
| 28 | 1.80 | 1.79 | 1.79 | 1.82 | 1.83 | 1.83 | 1.82 | 1.80 | 1.78 | 1.76 | 1.75 | 1.74 |
| 29 | 1.69 | 1.66 | 1.65 | 1.67 | 1.66 | 1.66 | 1.64 | 1.61 | 1.58 | 1.56 | 1.56 | 1.62 |
| 30 | 1.64 | 1.66 | 1.68 | 1.75 | 1.78 | 1.82 | 1.85 | 1.88 | 1.89 | 1.91 | 1.93 | 1.93 |
| 31 | 1.91 | 1.91 | 1.89 | 1.89 | 1.88 | 1.86 | 1.85 | 1.82 | 1.79 | 1.79 | 1.78 | 1.75 |
| Mean | 29.639 | 29.627 | 29.621 | 29.638 | 29.650 | 29.653 | 29.648 | 29.638 | 29.634 | 29.634 | 29.646 | 29.649 |

BAROGRAPH.

NOVEMBER, 1857.

28 inches +.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.71 | 1.65 | 1.61 | 1.59 | 1.56 | 1.54 | 1.52 | 1.49 | 1.47 | 1.46 | 1.48 | 1.48 |
| 2 | 1.48 | 1.46 | 1.46 | 1.48 | 1.48 | 1.49 | 1.48 | 1.47 | 1.46 | 1.48 | 1.50 | 1.52 |
| 3 | 1.54 | 1.55 | 1.56 | 1.59 | 1.62 | 1.64 | 1.64 | 1.64 | 1.64 | 1.62 | 1.64 | 1.64 |
| 4 | 1.62 | 1.62 | 1.64 | 1.65 | 1.66 | 1.66 | 1.66 | 1.66 | 1.66 | 1.67 | 1.69 | 1.68 |
| 5 | 1.66 | 1.65 | 1.65 | 1.66 | 1.68 | 1.69 | 1.70 | 1.71 | 1.71 | 1.72 | 1.75 | 1.78 |
| 6 | 1.79 | 1.81 | 1.83 | 1.88 | 1.89 | 1.92 | 1.93 | 1.95 | 1.95 | 1.96 | 2.01 | 2.02 |
| 7 | 2.01 | 2.01 | 2.03 | 2.07 | 2.08 | 2.10 | 2.10 | 2.11 | 2.12 | 2.12 | 2.13 | 2.15 |
| 8 | 2.14 | 2.13 | 2.13 | 2.15 | 2.16 | 2.17 | 2.16 | 2.17 | 2.16 | 2.16 | 2.16 | 2.18 |
| 9 | 2.18 | 2.16 | 2.16 | 2.18 | 2.19 | 2.20 | 2.20 | 2.22 | 2.22 | 2.23 | 2.25 | 2.27 |
| 10 | 2.29 | 2.30 | 2.35 | 2.36 | 2.39 | 2.40 | 2.42 | 2.42* | 2.43* | 2.45* | 2.49* | 2.49* |
| 11 | 2.49* | 2.49* | 2.50* | 2.51* | 2.54* | 2.54* | 2.54* | 2.55* | 2.56* | 2.56* | 2.57* | 2.58* |
| 12 | 2.56* | 2.54* | 2.53* | 2.52* | 2.51* | 2.49* | 2.47* | 2.44* | 2.42 | 2.40 | 2.37 | 2.36 |
| 13 | 2.32 | 2.27 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.22 | 2.21 | 2.19 | 2.19 | 2.19 |
| 14 | 2.17 | 2.15 | 2.12 | 2.12 | 2.10 | 2.07 | 2.05 | 2.03 | 2.05 | 2.08 | 2.13 | 2.16 |
| 15 | 2.15 | 2.13 | 2.13 | 2.14 | 2.13 | 2.10 | 2.08 | 2.05 | 2.02 | 2.01 | 2.02 | 2.03 |
| 16 | 2.01 | 2.00 | 2.00 | 2.01 | 2.02 | 2.02 | 2.01 | 1.98 | 1.96 | 1.95 | 1.95 | 1.94 |
| 17 | 1.92 | 1.92 | 1.93 | 1.95 | 1.96 | 1.99 | 2.02 | 2.02 | 2.03 | 2.03 | 2.05 | 2.05 |
| 18 | 2.03 | 2.02 | 2.02 | 2.03 | 2.05 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.09 | 2.10 |
| 19 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.08 | 2.07 | 2.06 | 2.06 | 2.09 | 2.10 |
| 20 | 2.09 | 2.08 | 2.10 | 2.13 | 2.15 | 2.16 | 2.15 | 2.15 | 2.13 | 2.14 | 2.15 | 2.16 |
| 21 | 2.13 | 2.10 | 2.10 | 2.10 | 2.10 | 2.09 | 2.06 | 2.05 | 2.03 | 2.01 | 1.99 | 1.98 |
| 22 | 1.93 | 1.88 | 1.85 | 1.81 | 1.76 | 1.69 | 1.62 | 1.52 | 1.44 | 1.34 | 1.32 | 1.35 |
| 23 | 1.33 | 1.30 | 1.27 | 1.26 | 1.24 | 1.20 | 1.17 | 1.12 | 1.08 | 1.05 | 1.04 | 1.05 |
| 24 | 1.05 | 1.07 | 1.12 | 1.18 | 1.23 | 1.28 | 1.29 | 1.32 | 1.33 | 1.34 | 1.37 | 1.39 |
| 25 | 1.39 | 1.39 | 1.42 | 1.45 | 1.45 | 1.45 | 1.44 | 1.42 | 1.38 | 1.34 | 1.35 | 1.37 |
| 26 | 1.37 | 1.37 | 1.41 | 1.46 | 1.51 | 1.56 | 1.62 | 1.66 | 1.71 | 1.74 | 1.79 | 1.83 |
| 27 | 1.86 | 1.89 | 1.93 | 1.96 | 1.99 | 2.01 | 1.99 | 1.99 | 1.98 | 1.96 | 1.99 | 2.01 |
| 28 | 1.98 | 1.98 | 1.98 | 1.98 | 1.99 | 1.99 | 1.99 | 1.99 | 1.98 | 1.98 | 1.99 | 1.98 |
| 29 | 1.94 | 1.91 | 1.89 | 1.88 | 1.88 | 1.86 | 1.85 | 1.81 | 1.78 | 1.75 | 1.75 | 1.75 |
| 30 | 1.68 | 1.66 | 1.65 | 1.65 | 1.64 | 1.64 | 1.64 | 1.62 | 1.62 | 1.61 | 1.62 | 1.65 |
| Mean | 29.897 | 29.887 | 29.890 | 29.902 | 29.909 | 29.911 | 29.906 | 29.898 | 29.888 | 29.883 | 29.897 | 29.907 |

* Interpolated from eye observations.

BAROGRAPH.

DECEMBER, 1857.

28 inches +.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1 | 1.65 | 1.65 | 1.66 | 1.69 | 1.71 | 1.75 | 1.79 | 1.79 | 1.80 | 1.80 | 1.82 | 1.83 |
| 2 | 1.83 | 1.82 | 1.81 | 1.79 | 1.78 | 1.75 | 1.71 | 1.65 | 1.59 | 1.56 | 1.54 | 1.54 |
| 3 | 1.52 | 1.49 | 1.49 | 1.51 | 1.52 | 1.54 | 1.56 | 1.58 | 1.62 | 1.69 | 1.75 | 1.81 |
| 4 | 1.83 | 1.84 | 1.86 | 1.89 | 1.89 | 1.90 | 1.89 | 1.88 | 1.88 | 1.91 | 1.95 | 1.98 |
| 5 | 1.99 | 2.01 | 2.03 | 2.07 | 2.08 | 2.09 | 2.08 | 2.08 | 2.07 | 2.09 | 2.13 | 2.16 |
| 6 | 2.16 | 2.15 | 2.18 | 2.18 | 2.19 | 2.19 | 2.20 | 2.20 | 2.20 | 2.19 | 2.20 | 2.19 |
| 7 | 2.19 | 2.16 | 2.15 | 2.18 | 2.25 | 2.30 | 2.35 | 2.40 | 2.44* | 2.46* | 2.48* | 2.50* |
| 8 | 2.49* | 2.45* | 2.44* | 2.42 | 2.40 | 2.39 | 2.35 | 2.32 | 2.29 | 2.25 | 2.22 | 2.22 |
| 9 | 2.19 | 2.15 | 2.14 | 2.13 | 2.13 | 2.13 | 2.12 | 2.12 | 2.12 | 2.13 | 2.15 | 2.16 |
| 10 | 2.16 | 2.17 | 2.19 | 2.22 | 2.23 | 2.26 | 2.26 | 2.27 | 2.29 | 2.30 | 2.33 | 2.36 |
| 11 | 2.36 | 2.33 | 2.34 | 2.39 | 2.42 | 2.43* | 2.46* | 2.47* | 2.49* | 2.50* | 2.51* | 2.52* |
| 12 | 2.52* | 2.52* | 2.51* | 2.50* | 2.49* | 2.49* | 2.47* | 2.45* | 2.46* | 2.46* | 2.45* | 2.45* |
| 13 | 2.43* | 2.41 | 2.37 | 2.35 | 2.32 | 2.30 | 2.29 | 2.26 | 2.23 | 2.21 | 2.19 | 2.19 |
| 14 | 2.15 | 2.10 | 2.08 | 2.05 | 2.03 | 2.00 | 1.98 | 1.96 | 1.95 | 1.93 | 1.93 | 1.95 |
| 15 | 1.93 | 1.92 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |
| 16 | 1.88 | 1.86 | 1.89 | 1.91 | 1.92 | 1.92 | 1.93 | 1.93 | 1.92 | 1.91 | 1.93 | 1.93 |
| 17 | 1.93 | 1.93 | 1.94 | 1.96 | 1.99 | 2.00 | 1.96 | 1.98 | 1.96 | 1.96 | 1.96 | 1.95 |
| 18 | 1.88 | 1.82 | 1.78 | 1.75 | 1.78 | 1.79 | 1.82 | 1.83 | 1.86 | 1.89 | 1.91 | 1.93 |
| 19 | 1.94 | 1.94 | 1.96 | 1.97 | 1.98 | 1.96 | 1.95 | 1.92 | 1.89 | 1.84 | 1.79 | 1.74 |
| 20 | 1.66 | 1.65 | 1.69 | 1.76 | 1.76 | 1.78 | 1.81 | 1.81 | 1.81 | 1.81 | 1.82 | 1.85 |
| 21 | 1.86 | 1.86 | 1.88 | 1.88 | 1.91 | 1.92 | 1.92 | 1.93 | 1.93 | 1.93 | 1.95 | 1.96 |
| 22 | 1.97 | 1.98 | 2.01 | 2.03 | 2.08 | 2.08 | 2.09 | 2.10 | 2.10 | 2.12 | 2.15 | 2.18 |
| 23 | 2.18 | 2.16 | 2.18 | 2.19 | 2.21 | 2.22 | 2.22 | 2.22 | 2.22 | 2.22 | 2.23 | 2.25 |
| 24 | 2.24 | 2.21 | 2.21 | 2.19 | 2.18 | 2.16 | 2.13 | 2.10 | 2.08 | 2.06 | 2.08 | 2.12 |
| 25 | 2.12 | 2.14 | 2.16 | 2.18 | 2.22 | 2.23 | 2.23 | 2.23 | 2.23 | 2.22 | 2.22 | 2.22 |
| 26 | 2.19 | 2.18 | 2.16 | 2.18 | 2.18 | 2.19 | 2.19 | 2.20 | 2.21 | 2.21 | 2.23 | 2.26 |
| 27 | 2.25 | 2.23 | 2.23 | 2.25 | 2.25 | 2.26 | 2.26 | 2.26 | 2.27 | 2.26 | 2.28 | 2.30 |
| 28 | 2.28 | 2.30 | 2.29 | 2.30 | 2.31 | 2.32 | 2.32 | 2.33 | 2.32 | 2.32 | 2.33 | 2.35 |
| 29 | 2.35 | 2.35 | 2.35 | 2.36 | 2.37 | 2.39 | 2.37 | 2.37 | 2.37 | 2.37 | 2.39 | 2.40 |
| 30 | 2.39 | 2.37 | 2.36 | 2.37 | 2.39 | 2.40 | 2.39 | 2.38 | 2.37 | 2.36 | 2.36 | 2.36 |
| 31 | 2.32 | 2.30 | 2.30 | 2.30 | 2.32 | 2.33 | 2.32 | 2.31 | 2.30 | 2.29 | 2.30 | 2.32 |
| Mean | 30.091 | 30.078 | 30.083 | 30.091 | 30.104 | 30.106 | 30.106 | 30.104 | 30.101 | 30.103 | 30.112 | 30.124 |

* Interpolated from eye observations.

THERMOGRAPH.

JANUARY, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|-----------------|---------------------------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|---------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| 1856. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dec. 31 | ... | ... | ... | ... | ... | ... | (49.7) | (48.9) | (49.3) | (46.9) | (45.7) | (46.5) |
| 1857. | | | | | | | | | | | | |
| Jan. 1 | 48.9 | 49.7 | 48.5 | 47.3 | 47.3 | 47.7 | 49.3 | 49.7 | 47.7 | 44.5 | 44.5 | 42.5 |
| 2 | 44.9 | 46.5 | 42.5 | 40.5 | 39.7 | 40.9 | 41.3 | 42.1 | 43.7 | 44.9 | 48.1 | 48.5 |
| 3 | 48.5 | 48.1 | 44.5 | 40.1 | 41.3 | 41.3 | 41.7 | 41.3 | 40.5 | 40.1 | 39.3 | 39.7 |
| 4 | 41.7 | 40.5 | 40.9 | 40.9 | 38.0 | 37.2 | 36.8 | 35.6 | 36.4 | 35.2 | 33.5 | 31.9 |
| 5 | 36.4 | 40.9 | 37.2 | 33.5 | 29.9 | 26.6 | 25.8 | 27.0 | 28.6 | 30.3 | 31.9 | 32.7 |
| 6 | 34.0 | 34.8 | 34.8 | 33.1 | 33.1 | 33.1 | 32.7 | 32.7 | 32.3 | 29.0 | 28.6 | 31.5 |
| 7 | 32.3 | 33.1 | 32.3 | 31.9 | 31.9 | 31.9 | 31.5 | 31.9 | 31.9 | 32.7 | 33.1 | 34.4 |
| 8 | 36.4 | 37.2 | 37.6 | 37.6 | 38.0 | 38.0 | 38.0 | 36.8 | 34.8 | 38.5 | 38.0 | 42.1 |
| 9 | 45.3 | 46.9 | 47.7 | 47.3 | 47.7 | 48.9 | 49.3 | 50.2 | 50.2 | 48.5 | 47.3 | 49.3 |
| 10 | 50.2 | 50.2 | 46.9 | 44.9 | 46.1 | 46.5 | 45.7 | 44.9 | 44.9 | 43.7 | 45.3 | 44.1 |
| 11 | 43.3 | 43.7 | 45.7 | 44.9 | 43.3 | 42.1 | 39.7 | 39.3 | 34.8 | 33.5 | 33.1 | 35.6 |
| 12 | 36.4 | 38.0 | 37.6 | 35.6 | 33.5 | 32.3 | 31.9 | 36.0 | 34.0 | 32.7 | 31.5 | 34.0 |
| 13 | 35.2 | 35.6 | 34.8 | 34.0 | 37.6 | 36.8 | 37.2 | 36.4 | 35.2 | 34.0 | 33.1 | 34.0 |
| 14 | 36.0 | 37.2 | 37.6 | 34.0 | 34.8 | 26.6 | 25.0 | 29.9 | 32.3 | 34.0 | 35.6 | 36.8 |
| 15 | 39.3 | 40.5 | 42.9 | 39.3 | 38.9 | 38.9 | 34.4 | 34.4 | 33.5 | 33.1 | 33.5 | 36.8 |
| 16 | 43.3 | 44.7 | 43.7 | 40.1 | 38.0 | 38.5 | 34.8 | 34.0 | 33.5 | 34.4 | 34.8 | 37.2 |
| 17 | 39.3 | 42.9 | 42.5 | 42.9 | 42.1 | 44.5 | 45.7 | 45.7 | 46.1 | 45.7 | 46.1 | 47.3 |
| 18 | 48.9 | 49.3 | 48.9 | 46.9 | 46.1 | 47.3 | 47.3 | 48.1 | 48.5 | 48.5 | 46.1 | 47.3 |
| 19 | 48.1 | 48.5 | 47.3 | 40.1 | 36.8 | 36.8 | 35.2 | 35.2 | 36.8 | 38.5 | 40.5 | 44.1 |
| 20 | 44.1 | 34.8 | 34.0 | 34.0 | 34.0 | 34.0 | 31.5 | 29.9 | 29.5 | 28.6 | 27.0 | 29.0 |
| 21 | 33.1 | 37.2 | 36.0 | 32.3 | 34.0 | 37.6 | 38.0 | 38.0 | 38.0 | 36.8 | 36.0 | 36.0 |
| 22 | 39.7 | 39.3 | 38.5 | 38.0 | 40.5 | 42.5 | 43.3 | 38.0 | 38.0 | 36.8 | 40.5 | 40.5 |
| 23 | 42.9 | 42.9 | 40.9 | 35.6 | 35.2 | 34.8 | 35.2 | 37.2 | 38.0 | 38.9 | 40.1 | 40.1 |
| 24 | 41.7 | 42.1 | 41.7 | 38.0 | 38.0 | 38.0 | 38.0 | 36.8 | 37.2 | 36.8 | 37.2 | 37.2 |
| 25 | 38.0 | 36.8 | 38.0 | 36.8 | 34.0 | 34.8 | 34.8 | 35.2 | 34.8 | 34.8 | 33.5 | 32.3 |
| 26 | 34.0 | 36.4 | 35.2 | 33.5 | 32.7 | 31.9 | 33.5 | 32.7 | 31.9 | 30.7 | 32.7 | 30.7 |
| 27 | (34.8) | (36.0) | (35.6) | ... | ... | *(27.5) | (34.0) | ... | ... | ... | ... | *(28.0) |
| 28 | ... | (35.6) | (34.4) | (31.5) | (30.3) | (29.5) | ... | ... | ... | ... | ... | *(22.7) |
| 29 | ... | ... | ... | ... | ... | *(21.5) | ... | ... | ... | ... | ... | (29.9) |
| 30 | 32.7 | 34.0 | 33.1 | 34.8 | 35.2 | 35.2 | 36.8 | 35.6 | 33.5 | 33.5 | 32.7 | 32.3 |
| 31 | (36.8) | (38.0) | (37.2) | (33.5) | (32.7) | (32.3) | (36.4) | (37.6) | ... | ... | ... | (31.1) |
| Mean of 27 days | 40.5 | 41.3 | 40.4 | 38.4 | 38.1 | 37.8 | 37.6 | 37.6 | 37.3 | 37.0 | 37.2 | 38.1 |

Reduction to Standard Thermometer -- 1° 0.

* Eye observations.

HYGROGRAPH.

JANUARY, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------------------------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|---------|
| 1856. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dec. 31 | ... | ... | ... | ... | ... | ... | (48.9) | (49.3) | (48.9) | (47.3) | (46.1) | (46.9) |
| 1857. | | | | | | | | | | | | |
| Jan. 1 | 48.2 | 47.2 | 46.3 | 45.3 | 45.8 | 47.2 | 48.6 | 49.1 | 46.3 | 43.4 | 42.9 | 39.6 |
| 2 | 42.4 | 41.5 | 39.6 | 38.2 | 37.7 | 39.1 | 39.6 | 40.5 | 42.0 | 43.4 | 47.7 | 45.3 |
| 3 | 44.3 | 42.9 | 40.5 | 37.7 | 38.2 | 38.2 | 38.2 | 37.7 | 37.7 | 37.7 | 37.3 | 38.7 |
| 4 | 39.6 | 38.7 | 40.1 | 39.1 | 36.8 | 35.8 | 36.3 | 34.9 | 34.4 | 32.5 | 32.1 | 31.1 |
| 5 | 30.1 | 31.1 | 29.6 | 27.8 | 26.3 | 25.9 | 27.8 | 28.7 | 29.2 | 30.1 | 31.6 | 32.5 |
| 6 | 32.5 | 32.5 | 32.5 | 31.6 | 30.6 | 31.6 | 32.1 | 32.5 | 32.1 | 29.6 | 27.8 | 30.6 |
| 7 | 31.6 | 32.1 | 31.6 | 30.6 | 30.6 | 30.6 | 30.6 | 31.6 | 30.6 | 32.1 | 32.1 | 33.0 |
| 8 | 34.9 | 35.4 | 37.3 | 36.3 | 37.3 | 37.3 | 37.3 | 35.8 | 34.4 | 37.7 | 37.3 | 40.5 |
| 9 | 44.3 | 45.8 | 46.8 | 46.3 | 46.8 | 47.7 | 48.2 | 48.6 | 48.2 | 46.8 | 45.8 | 47.2 |
| 10 | 46.8 | 45.8 | 44.3 | 42.9 | 44.3 | 45.3 | 45.3 | 43.8 | 44.3 | 43.4 | 42.9 | 41.0 |
| 11 | 41.0 | 42.0 | 43.4 | 42.4 | 41.0 | 40.1 | 37.7 | 37.3 | 34.0 | 33.5 | 31.6 | 34.9 |
| 12 | 35.4 | 36.3 | 35.4 | 34.4 | 33.0 | 32.5 | 31.1 | 34.9 | 33.5 | 33.0 | 32.1 | 33.5 |
| 13 | 34.0 | 34.4 | 33.5 | 33.0 | 35.4 | 34.9 | 34.9 | 34.4 | 32.1 | 30.6 | 29.6 | 30.6 |
| 14 | 32.1 | 33.0 | 33.5 | 29.6 | 25.9 | 25.9 | 25.9 | 27.3 | 30.6 | 32.1 | 33.5 | 35.4 |
| 15 | 38.7 | 39.6 | 41.5 | 38.2 | 37.3 | 37.7 | 33.5 | 33.5 | 32.5 | 32.5 | 32.1 | 35.4 |
| 16 | 40.5 | 41.5 | 40.1 | 37.7 | 36.3 | 36.3 | 33.5 | 33.0 | 32.5 | 33.5 | 33.5 | 36.3 |
| 17 | 38.2 | 41.0 | 41.0 | 41.5 | 41.0 | 43.4 | 44.3 | 44.3 | 44.8 | 44.8 | 44.8 | 46.3 |
| 18 | 47.7 | 47.7 | 47.2 | 45.8 | 44.8 | 45.8 | 46.8 | 47.2 | 47.7 | 47.2 | 44.8 | 45.3 |
| 19 | 45.3 | 44.8 | 44.3 | 38.7 | 35.4 | 35.4 | 33.5 | 34.0 | 35.4 | 37.3 | 38.7 | 41.5 |
| 20 | 42.0 | 33.5 | 33.5 | 33.5 | 33.5 | 33.0 | 31.1 | 30.1 | 28.7 | 27.8 | 28.2 | 29.2 |
| 21 | 31.6 | 35.4 | 34.9 | 32.5 | 33.0 | 35.4 | 36.3 | 36.8 | 36.8 | 35.4 | 34.9 | 34.4 |
| 22 | 36.8 | 37.3 | 36.3 | 36.3 | 36.8 | 39.6 | 41.5 | 40.5 | 36.3 | 35.4 | 34.9 | 37.3 |
| 23 | 39.1 | 38.7 | 36.3 | 34.0 | 32.5 | 33.5 | 34.0 | 35.4 | 36.3 | 37.3 | 37.7 | 37.7 |
| 24 | 38.7 | 38.7 | 37.3 | 36.3 | 35.8 | 35.4 | 35.4 | 35.4 | 35.4 | 35.4 | 34.9 | 35.8 |
| 25 | 35.8 | 35.4 | 36.3 | 35.4 | 34.4 | 33.5 | 33.0 | 34.0 | 33.0 | 32.1 | 32.1 | 33.0 |
| 26 | 34.0 | 34.4 | 33.0 | 32.5 | 32.1 | 31.6 | 31.6 | 31.6 | 30.6 | 30.1 | 29.6 | 31.1 |
| 27 | 34.0 | 32.1 | 32.1 | 29.6 | 28.2 | 26.8 | 26.3 | 25.4 | 24.5 | 22.6 | 24.5 | 29.2 |
| 28 | 32.1 | 32.5 | 32.1 | 30.6 | 30.1 | 29.6 | 27.3 | 26.3 | 25.5 | 20.2 | * 21.6 | * 23.0 |
| 29 | ... | (29.6) | (29.2) | ... | ... | *(22.0) | ... | ... | ... | ... | ... | *(29.7) |
| 30 | 29.6 | 30.6 | 32.1 | 32.5 | 34.0 | 33.0 | 35.4 | 34.4 | 33.5 | 33.0 | 32.5 | 31.6 |
| 31 | (34.4) | (35.4) | (34.0) | (32.1) | (30.6) | (29.6) | (30.1) | (28.7) | ... | ... | ... | (29.6) |
| Mean of 29 days. | 38.0 | 38.0 | 37.6 | 35.8 | 35.7 | 35.9 | 35.7 | 35.8 | 35.3 | 34.8 | 34.5 | 35.9 |

Reduction to Standard + 0°.4.

* Eye observations.

THERMOGRAPH.

FEBRUARY, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------------------------|--------|--------|--------|--------|--------|---------|--------|--------|--------|-------|-------|--------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 34.0 | 35.2 | 36.0 | 35.2 | 34.0 | 32.3 | 30.7 | 29.9 | 31.5 | 32.7 | 34.0 | 34.8 |
| 2 | (36.8) | (37.2) | (36.4) | (34.8) | ... | (32.3) | (32.3) | (31.9) | (30.7) | ... | ... | (27.8) |
| 3 | ... | ... | ... | ... | ... | *(27.2) | ... | ... | ... | ... | ... | (30.7) |
| 4 | (32.7) | (33.5) | (33.1) | ... | ... | *(23.7) | ... | ... | ... | ... | ... | (32.7) |
| 5 | 34.8 | 36.0 | 36.0 | 36.4 | 38.0 | 38.9 | 39.3 | 40.1 | 40.9 | 41.7 | 41.7 | 42.9 |
| 6 | 46.1 | 49.9 | 46.1 | 41.7 | 43.3 | 43.3 | 44.5 | 44.5 | 43.7 | 43.3 | 43.3 | 44.1 |
| 7 | 44.9 | 44.9 | 43.3 | 42.9 | 42.1 | 42.1 | 41.7 | 41.7 | 42.1 | 42.1 | 42.5 | 43.3 |
| 8 | 43.7 | 42.1 | 42.9 | 42.9 | 44.1 | 42.9 | 43.3 | 43.3 | 42.1 | 40.5 | 39.7 | 42.1 |
| 9 | 45.3 | 46.5 | 45.3 | 43.7 | 44.1 | 44.5 | 46.1 | 46.9 | 42.1 | 39.7 | 38.5 | 42.9 |
| 10 | 46.9 | 48.1 | 45.7 | 42.9 | 42.1 | 38.9 | 36.8 | 38.0 | 40.5 | 40.5 | 41.7 | 44.9 |
| 11 | (47.7) | (47.3) | (45.7) | (44.1) | (43.3) | (44.1) | (42.9) | (40.1) | ... | ... | ... | (40.9) |
| 12 | 44.9 | 46.9 | 46.5 | 40.1 | 38.9 | 35.6 | 34.0 | 33.5 | 32.3 | 34.0 | 34.4 | 37.6 |
| 13 | 42.1 | 44.5 | 46.1 | 40.1 | 37.6 | 36.4 | 35.2 | 36.8 | 35.6 | 37.6 | 37.6 | 39.7 |
| 14 | 42.1 | 42.5 | 43.3 | 36.0 | 34.9 | 31.9 | 29.9 | 31.9 | 33.5 | 35.2 | 35.2 | 36.0 |
| 15 | 39.7 | 41.3 | 41.3 | 40.1 | 38.0 | 38.9 | 38.0 | 35.2 | 33.5 | 29.9 | 29.9 | 34.8 |
| 16 | 48.9 | 52.6 | 51.8 | 47.7 | 43.7 | 43.7 | 42.1 | 38.9 | 42.1 | 43.7 | 41.7 | 45.3 |
| 17 | 51.4 | 51.4 | 50.2 | 48.1 | 46.1 | 45.7 | 42.9 | 40.9 | 42.9 | 43.3 | 44.9 | 48.1 |
| 18 | 51.0 | 50.2 | 48.1 | 45.7 | 45.3 | 45.7 | 44.9 | 40.1 | 41.7 | 41.7 | 42.5 | 42.1 |
| 19 | 48.5 | 48.9 | 48.1 | 44.9 | 44.1 | 43.3 | 42.5 | 41.7 | 41.3 | 39.7 | 40.9 | 42.5 |
| 20 | 44.9 | 48.1 | 46.9 | 45.7 | 41.0 | 39.7 | 38.9 | 36.4 | 36.0 | 37.2 | 39.7 | 43.3 |
| 21 | 46.5 | 49.3 | 49.3 | 47.7 | 46.1 | 44.5 | 44.1 | 43.3 | 43.3 | 43.3 | 43.7 | 46.5 |
| 22 | 49.3 | 51.4 | 50.2 | 46.5 | 43.3 | 42.1 | 40.1 | 38.9 | 37.2 | 34.0 | 32.3 | 38.9 |
| 23 | 46.9 | 50.2 | 51.4 | 44.9 | 42.1 | 40.1 | 37.2 | 34.0 | 36.0 | 38.0 | 37.2 | 40.1 |
| 24 | 44.1 | 48.1 | 51.0 | 46.5 | 43.7 | 41.7 | 35.6 | 32.7 | 30.3 | 30.7 | 32.3 | 36.8 |
| 25 | 38.9 | 42.1 | 44.1 | 42.1 | 40.9 | 38.0 | 37.2 | 36.0 | 32.7 | 29.9 | 30.3 | 35.2 |
| 26 | 42.1 | 45.7 | 46.5 | 40.5 | 37.6 | 35.6 | 37.8 | 38.0 | 36.4 | 36.0 | 37.6 | 41.3 |
| 27 | 47.3 | 48.1 | 48.1 | 46.5 | 44.9 | 44.9 | 44.5 | 44.1 | 44.1 | 44.1 | 45.3 | 46.9 |
| 28 | 52.6 | 55.0 | 54.6 | 50.6 | 41.7 | 41.7 | 39.7 | 40.1 | 38.0 | 38.0 | 38.5 | 40.1 |
| Mean of 24 days. | 44.9 | 46.6 | 46.4 | 43.3 | 41.4 | 40.5 | 39.5 | 38.6 | 38.3 | 38.2 | 38.6 | 41.3 |

Reduction to the Standard Thermometer — 0°.8.

* Eye observations.

HYGROGRAPH.

FEBRUARY, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 32.1 | 34.4 | 34.9 | 34.0 | 33.0 | 32.5 | 30.6 | 28.7 | 29.6 | 31.6 | 32.5 | 34.0 |
| 2 | 35.8 | 36.3 | 35.4 | 33.0 | 32.5 | 32.1 | 32.1 | 31.1 | 30.1 | 29.2 | 28.2 | 28.2 |
| 3 | (29.6) | (30.6) | (29.6) | (27.8) | (27.3) | (27.3) | (28.2) | (28.2) | ... | ... | ... | (29.2) |
| 4 | (32.1) | (34.0) | (34.0) | (28.2) | (29.2) | (23.5) | (24.5) | (23.5) | (24.5) | ... | ... | (32.7) |
| 5 | 34.0 | 34.9 | 35.4 | 35.8 | 37.3 | 38.7 | 39.1 | 39.6 | 40.5 | 41.0 | 41.5 | 42.4 |
| 6 | 45.3 | 46.8 | 45.3 | 41.5 | 42.4 | 42.4 | 43.8 | 43.8 | 43.2 | 42.4 | 42.4 | 42.9 |
| 7 | 42.0 | 42.0 | 40.5 | 40.5 | 40.7 | 41.0 | 40.5 | 40.5 | 40.5 | 40.5 | 41.0 | 41.5 |
| 8 | 42.0 | 41.0 | 42.0 | 41.5 | 42.4 | 41.5 | 41.5 | 41.5 | 40.5 | 39.1 | 37.3 | 38.2 |
| 9 | 41.0 | 42.0 | 40.5 | 40.1 | 41.0 | 42.4 | 43.8 | 44.8 | 39.6 | 37.7 | 36.8 | 41.5 |
| 10 | 43.4 | 44.3 | 42.9 | 41.5 | 40.5 | 37.7 | 35.4 | 35.8 | 37.7 | 39.1 | 40.1 | 43.4 |
| 11 | 43.8 | 43.4 | 42.0 | 42.0 | 41.5 | 41.5 | 37.7 | 35.4 | 33.0 | 31.6 | 31.6 | 35.4 |
| 12 | 40.1 | 40.5 | 41.0 | 37.7 | 35.4 | 34.0 | 32.5 | 32.1 | 31.1 | 33.0 | 33.5 | 35.8 |
| 13 | 39.6 | 41.0 | 41.5 | 37.7 | 35.8 | 34.9 | 34.0 | 35.4 | 33.5 | 35.4 | 35.4 | 37.3 |
| 14 | 39.1 | 39.6 | 40.1 | 35.8 | 30.6 | 30.6 | 28.2 | 30.1 | 32.5 | 34.0 | 34.0 | 34.9 |
| 15 | 37.3 | 39.1 | 39.6 | 39.1 | 36.8 | 37.3 | 37.3 | 34.4 | 32.5 | 31.6 | 30.1 | 34.9 |
| 16 | 46.3 | 49.1 | 47.7 | 43.8 | 41.5 | 41.5 | 40.1 | 39.1 | 41.0 | 42.0 | 40.5 | 43.8 |
| 17 | 48.6 | 49.1 | 49.1 | 47.2 | 45.3 | 44.3 | 42.4 | 41.0 | 42.0 | 42.4 | 43.8 | 46.8 |
| 18 | 49.1 | 47.2 | 46.8 | 44.8 | 44.8 | 44.8 | 44.3 | 38.7 | 41.0 | 39.6 | 42.0 | 41.5 |
| 19 | (46.3) | (46.3) | (45.8) | (43.8) | ... | (41.7) | ... | ... | ... | ... | ... | (41.5) |
| 20 | * 42.4 | 43.8 | 43.4 | 42.9 | 40.5 | 38.7 | 37.7 | 35.8 | 35.4 | 36.3 | 39.1 | 42.4 |
| 21 | 44.8 | 46.3 | 46.3 | 45.3 | 44.8 | 43.4 | 42.9 | 42.4 | 42.4 | 42.4 | 42.4 | 44.8 |
| 22 | 45.3 | 46.8 | 45.8 | 43.8 | 41.5 | 40.5 | 39.1 | 37.7 | 36.3 | 33.5 | 31.6 | 37.7 |
| 23 | (44.8) | (47.2) | ... | ... | ... | (38.5) | ... | ... | ... | ... | ... | (37.8) |
| 24 | * 43.8 | 44.8 | 46.3 | 43.8 | 41.0 | 40.1 | 35.4 | 32.5 | 29.6 | 30.1 | 31.1 | 36.3 |
| 25 | 37.7 | 40.1 | 42.4 | 42.0 | 40.1 | 37.3 | 36.3 | 35.4 | 32.1 | 30.1 | 30.1 | 33.0 |
| 26 | 39.6 | 41.0 | 41.0 | 38.7 | 35.8 | 34.4 | 35.4 | 35.4 | 34.0 | 34.0 | 35.8 | 39.1 |
| 27 | 43.4 | 44.3 | 44.8 | 44.3 | 43.8 | 43.4 | 43.8 | 43.8 | 43.4 | 43.4 | 44.3 | 45.8 |
| 28 | 49.6 | 49.6 | 49.6 | 48.2 | 41.0 | 40.5 | 39.1 | 39.6 | 37.7 | 37.7 | 38.2 | 40.1 |
| Mean of 24 days. | 42.0 | 42.7 | 42.7 | 41.1 | 39.6 | 39.0 | 38.1 | 37.3 | 36.6 | 36.5 | 36.8 | 39.2 |

Reduction to Standard — $0^{\circ}.6$.

* Eye observations.

THERMOGRAPH.

MARCH, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------------------|---------------------------|--------|--------|--------|--------|---------|--------|--------|-------|-------|-------|---------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 47.7 | 51.8 | 51.4 | 51.0 | 50.2 | 50.2 | 48.5 | 48.1 | 47.3 | 46.9 | 46.1 | 46.9 |
| 2 | 48.9 | 48.5 | 48.1 | 48.1 | 45.7 | 44.9 | 44.1 | 43.3 | 42.5 | 42.5 | 42.1 | 43.7 |
| 3 | 44.9 | 45.7 | 46.1 | 44.1 | 41.3 | 39.7 | 38.9 | 39.7 | 40.9 | 41.7 | 42.9 | 45.3 |
| 4 | 48.5 | 48.1 | 47.7 | 44.9 | 42.1 | 39.3 | 36.4 | 35.2 | 33.5 | 31.5 | 31.9 | 38.0 |
| 5 | 42.5 | 44.5 | 42.9 | 42.9 | 42.9 | 43.3 | 44.9 | 45.3 | 45.7 | 45.7 | 46.1 | 48.1 |
| 6 | 51.4 | 52.6 | 52.2 | 51.0 | 45.3 | 42.9 | 40.9 | 41.7 | 39.3 | 38.9 | 40.5 | 45.7 |
| 7 | 51.4 | 51.4 | 48.9 | 49.7 | 42.9 | 41.3 | 39.7 | 38.0 | 37.2 | 38.0 | 41.7 | 44.1 |
| 8 | 38.9 | 42.5 | 37.2 | 37.6 | 34.0 | 34.0 | 33.1 | 34.4 | 35.2 | 36.0 | 37.6 | 40.1 |
| 9 | 42.1 | 40.1 | 34.0 | 34.4 | 31.5 | 32.3 | 30.7 | 30.7 | 29.5 | 27.4 | 31.1 | 35.2 |
| 10 | 38.5 | 38.9 | 39.7 | 37.2 | 36.0 | 35.6 | 34.8 | 33.5 | 30.7 | 29.9 | 33.1 | 36.0 |
| 11 | 38.5 | 39.7 | 38.0 | 36.4 | 33.1 | 31.9 | 32.3 | 31.9 | 28.2 | 30.7 | 33.1 | 36.0 |
| 12 | 41.3 | 44.1 | 45.7 | 42.5 | 40.5 | 38.0 | 36.0 | 36.4 | 35.6 | 35.2 | 36.0 | 39.3 |
| 13 | 41.7 | 40.9 | 38.0 | 38.9 | 38.0 | 36.8 | 36.0 | 38.9 | 42.1 | 42.5 | 46.9 | 51.0 |
| 14 | 52.2 | 51.8 | 51.4 | 49.7 | 46.9 | 48.5 | 52.6 | 47.7 | 44.9 | 43.3 | 41.3 | 39.3 |
| 15 | 36.4 | 45.3 | 42.1 | 42.1 | 40.1 | 38.9 | 38.9 | 38.6 | 38.0 | 37.2 | 40.1 | 42.0 |
| 16 | 45.3 | 51.0 | 51.0 | 47.7 | 42.9 | 40.9 | 39.7 | 37.6 | 37.2 | 37.2 | 40.9 | 47.3 |
| 17 | (51.0) | (53.0) | (50.2) | (47.3) | (44.5) | *(42.1) | ... | ... | ... | ... | ... | (50.2) |
| 18 | 55.0 | 59.5 | 58.2 | 55.4 | 51.4 | 50.2 | 49.7 | 48.5 | 48.1 | 44.9 | 43.7 | 44.5 |
| 19 | 47.3 | 49.7 | 51.4 | 52.6 | 51.0 | 51.0 | 50.2 | 50.2 | 50.6 | 50.2 | 50.6 | 51.4 |
| 20 | 52.2 | 51.0 | 48.1 | 46.5 | 44.1 | 41.3 | 40.5 | 38.9 | 36.0 | 34.8 | 34.8 | 36.0 |
| 21 | (39.3) | (41.3) | (39.7) | (35.2) | (30.7) | *(30.5) | ... | (32.7) | ... | ... | ... | *(35.0) |
| 22 | ... | ... | ... | (36.0) | ... | *(32.7) | (34.4) | ... | ... | ... | ... | *(37.0) |
| 23 | 39.7 | 40.1 | 41.7 | 37.6 | 34.8 | 31.9 | 32.7 | 33.5 | 32.7 | 34.0 | 35.6 | 40.1 |
| 24 | 44.5 | 45.7 | 44.5 | 42.9 | 39.7 | 39.3 | 39.7 | 40.1 | 40.9 | 40.5 | 41.3 | 42.1 |
| 25 | 43.3 | 42.1 | 43.3 | 40.1 | 38.0 | 38.0 | 35.6 | 33.1 | 32.3 | 30.7 | 33.5 | 39.7 |
| 26 | 45.7 | 47.7 | 48.1 | 47.7 | 44.1 | 42.9 | 42.5 | 42.5 | 41.3 | 40.1 | 43.3 | 44.9 |
| 27 | 46.9 | 46.1 | 46.1 | 46.5 | 44.1 | 43.3 | 42.1 | 41.7 | 40.9 | 40.1 | 43.7 | 46.1 |
| 28 | 50.2 | 51.0 | 50.6 | 48.9 | 46.5 | 44.5 | 43.7 | 42.5 | 43.3 | 42.9 | 44.5 | 47.3 |
| 29 | 49.3 | 48.1 | 47.7 | 48.1 | 46.1 | 45.7 | 45.3 | 44.9 | 44.9 | 46.1 | 47.7 | 50.6 |
| 30 | 51.8 | 48.9 | 47.3 | 46.5 | 44.9 | 44.9 | 44.1 | 44.1 | 43.7 | 43.3 | 43.9 | 46.9 |
| 31 | 47.7 | 49.7 | 51.8 | 48.1 | 46.1 | 46.5 | 42.9 | 42.5 | 40.5 | 40.9 | 43.3 | 49.3 |
| Mean of 28 days. | 45.9 | 47.0 | 46.2 | 44.9 | 42.3 | 41.4 | 40.6 | 40.1 | 39.5 | 40.6 | 39.5 | 43.4 |

Reduction to Standard Thermometer — $0^{\circ}.4$.

* Eye observations.

HYGROGRAPH.

MARCH, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------------------------|--------|--------|--------|--------|------|--------|--------|--------|--------|-------|-------|--------|
| | o | o | o | o | o | o | o | o | o | o | o | o |
| 1 | 46.3 | 49.6 | 49.6 | 49.6 | 48.6 | 48.6 | 47.7 | 47.2 | 46.8 | 46.8 | 45.3 | 45.8 |
| 2 | 47.2 | 46.8 | 45.8 | 46.3 | 44.3 | 42.4 | 41.5 | 40.5 | 40.1 | 40.1 | 40.1 | 41.0 |
| 3 | 42.0 | 42.9 | 43.4 | 42.0 | 40.1 | 38.7 | 38.7 | 39.1 | 40.1 | 40.5 | 41.5 | 43.4 |
| 4 | (45.3) | (46.3) | ... | ... | ... | (36.3) | ... | ... | ... | ... | ... | (35.4) |
| 5 | 38.7 | 40.5 | 39.6 | 39.8 | 40.1 | 41.5 | 43.8 | 44.3 | 45.3 | 45.3 | 45.3 | 44.3 |
| 6 | 45.3 | 45.8 | 45.8 | 45.8 | 42.4 | 41.0 | 39.1 | 40.5 | 38.2 | 38.2 | 39.1 | 42.4 |
| 7 | 44.8 | 44.8 | 45.3 | 44.8 | 40.1 | 38.5 | 38.2 | 36.8 | 35.8 | 36.3 | 39.6 | 40.1 |
| 8 | 35.8 | 36.3 | 34.0 | 34.9 | 32.1 | 32.1 | 32.1 | 33.0 | 33.5 | 34.0 | 34.4 | 35.4 |
| 9 | 36.3 | 36.8 | 34.0 | 33.5 | 31.6 | 32.1 | 31.1 | 31.1 | 29.6 | 28.2 | 30.6 | 34.4 |
| 10 | 34.9 | 35.4 | 34.9 | 34.0 | 33.0 | 32.5 | 32.5 | 32.1 | 28.7 | 29.2 | 30.6 | 33.0 |
| 11 | 34.9 | 35.8 | 35.4 | 34.9 | 31.6 | 31.1 | 30.6 | 31.1 | 28.7 | 29.6 | 31.6 | 34.4 |
| 12 | 39.6 | 40.5 | 41.5 | 41.0 | 37.7 | 36.3 | 34.9 | 35.4 | 35.4 | 34.4 | 35.4 | 37.3 |
| 13 | 39.6 | 38.7 | 36.8 | 37.7 | 37.3 | 36.3 | 34.9 | 38.2 | 40.5 | 41.0 | 45.8 | 45.3 |
| 14 | 45.8 | 43.8 | 43.8 | 44.8 | 46.3 | 48.2 | 51.0 | 45.8 | 42.4 | 40.5 | 38.2 | 36.8 |
| 15 | 35.4 | 40.1 | 39.6 | 38.7 | 37.7 | 36.8 | 37.7 | 37.3 | 37.3 | 36.3 | 38.2 | 43.4 |
| 16 | 44.8 | 46.3 | 46.8 | 44.8 | 41.0 | 40.1 | 39.1 | 36.8 | 36.3 | 35.8 | 38.7 | 42.9 |
| 17 | 45.8 | 48.6 | 48.6 | 47.2 | 44.8 | 43.4 | 41.0 | 38.2 | 37.3 | 40.5 | 43.4 | 47.7 |
| 18 | 51.0 | 55.2 | 53.8 | 52.0 | 49.6 | 49.1 | 47.7 | 47.7 | 47.2 | 42.4 | 41.5 | 42.4 |
| 19 | 44.8 | 47.7 | 51.0 | 52.0 | 50.6 | 51.0 | 50.6 | 51.0 | 51.5 | 51.0 | 51.5 | 52.0 |
| 20 | (52.4) | (52.0) | (48.2) | (46.3) | ... | (40.1) | (38.7) | (37.7) | ... | ... | ... | (32.5) |
| 21 | ... | ... | ... | ... | ... | (28.3) | ... | ... | ... | ... | ... | (34.0) |
| 22 | ... | ... | ... | (36.8) | ... | (34.4) | (34.9) | (34.4) | (33.0) | ... | ... | (35.0) |
| 23 | (37.3) | ... | ... | ... | ... | (32.0) | ... | ... | ... | ... | ... | (38.3) |
| 24 | * 38.9 | 39.6 | 38.7 | 37.3 | 33.5 | 34.0 | 37.7 | 37.7 | 38.2 | 37.7 | 39.1 | 40.1 |
| 25 | 41.5 | 41.0 | 44.3 | 39.6 | 37.3 | 36.3 | 34.9 | 32.5 | 31.6 | 30.6 | 33.5 | 37.3 |
| 26 | 41.0 | 42.4 | 42.9 | 43.4 | 42.0 | 41.0 | 41.0 | 41.0 | 39.6 | 39.1 | 40.5 | 41.5 |
| 27 | 42.4 | 42.9 | 43.8 | 43.8 | 42.4 | 42.0 | 41.0 | 40.5 | 40.1 | 39.1 | 42.0 | 43.4 |
| 28 | 44.8 | 45.8 | 45.8 | 45.3 | 43.4 | 42.4 | 41.0 | 40.5 | 41.0 | 42.0 | 43.4 | 45.8 |
| 29 | 46.3 | 46.3 | 45.8 | 46.3 | 43.8 | 43.4 | 43.4 | 42.9 | 43.8 | 44.8 | 46.8 | 47.7 |
| 30 | 48.6 | 46.8 | 45.3 | 44.8 | 43.4 | 43.4 | 42.9 | 42.9 | 42.9 | 42.9 | 43.4 | 44.8 |
| 31 | 45.8 | 46.8 | 46.8 | 46.3 | 44.3 | 44.8 | 42.0 | 41.5 | 40.1 | 40.1 | 42.0 | 45.8 |
| Mean of 26 days. | 42.4 | 43.3 | 43.2 | 42.5 | 40.7 | 40.3 | 39.8 | 39.4 | 38.9 | 38.7 | 40.1 | 41.9 |

Reduction to Standard $+ 0^{\circ}.7$.

* Eye observation.

THERMOGRAPH.

APRIL, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| 1 | 51.4 | 51.8 | 51.4 | 49.7 | 45.7 | 45.3 | 45.7 | 45.7 | 46.1 | 45.7 | 47.7 | 47.3 |
| 2 | 51.0 | 51.4 | 53.0 | 51.0 | 49.3 | 47.3 | 46.9 | 46.9 | 46.9 | 46.5 | 48.9 | 52.2 |
| 3 | 50.6 | 51.8 | 50.2 | 49.2 | 46.4 | 46.0 | 44.4 | 43.1 | 42.7 | 43.1 | 45.7 | 49.2 |
| 4 | 51.5 | 49.9 | 50.9 | 51.5 | 50.9 | 51.2 | 51.2 | 50.6 | 50.4 | 50.9 | 53.4 | 55.7 |
| 5 | 60.9 | 63.1 | 57.9 | 56.3 | 54.7 | 52.8 | 51.5 | 51.5 | 50.9 | 50.9 | 52.4 | 55.1 |
| 6 | 56.0 | 58.3 | 58.3 | 53.8 | 48.9 | 48.3 | 46.7 | 44.4 | 44.7 | 45.7 | 49.2 | 53.4 |
| 7 | 57.3 | 58.9 | 57.0 | 53.4 | 50.9 | 48.6 | 45.4 | 46.0 | 46.4 | 45.7 | 48.9 | 53.1 |
| 8 | 54.4 | 54.7 | 53.1 | 50.6 | 48.0 | 45.0 | 43.1 | 42.7 | 44.1 | 44.1 | 47.4 | 50.6 |
| 9 | 56.6 | 58.9 | 57.6 | 53.8 | 48.6 | 44.7 | 42.1 | 40.2 | 38.9 | 35.7 | 40.8 | 53.1 |
| 10 | 58.3 | 59.9 | 62.5 | 56.3 | 53.4 | 50.2 | 48.3 | 47.7 | 47.0 | 43.1 | 41.2 | 42.4 |
| 11 | 45.4 | 47.4 | 48.6 | 47.7 | 42.1 | 38.6 | 39.2 | 36.8 | 38.3 | 33.7 | 38.3 | 44.1 |
| 12 | 48.6 | 49.2 | 45.7 | 40.5 | 38.3 | 37.0 | 33.0 | 34.0 | 32.7 | 33.4 | 36.3 | 37.0 |
| 13 | 38.6 | 41.2 | 38.3 | 36.6 | 36.3 | 35.0 | 35.7 | 36.3 | 33.7 | 34.0 | 38.0 | 41.5 |
| 14 | 45.0 | 47.4 | 48.6 | 42.1 | 37.6 | 36.6 | 34.7 | 33.0 | 31.2 | 32.1 | 38.0 | 44.4 |
| 15 | 48.6 | 49.9 | 48.9 | 46.0 | 41.2 | 38.9 | 36.0 | 34.0 | 33.4 | 35.7 | 41.5 | 44.7 |
| 16 | 47.4 | 45.4 | 47.7 | 43.4 | 40.2 | 37.6 | 36.0 | 34.7 | 36.6 | 37.6 | 45.7 | 51.5 |
| 17 | 53.8 | 56.3 | 57.9 | 53.4 | 49.9 | 48.0 | 46.4 | 46.0 | 44.7 | 45.7 | 51.2 | 57.6 |
| 18 | 64.8 | 66.1 | 66.1 | 61.5 | 53.8 | 53.1 | 51.8 | 51.8 | 49.2 | 47.7 | 53.4 | 58.9 |
| 19 | 59.9 | 62.1 | 61.5 | 58.3 | 55.1 | 48.9 | 46.4 | 44.7 | 42.3 | 41.8 | 48.3 | 51.5 |
| 20 | 59.9 | 60.6 | 57.6 | 53.8 | 50.2 | 44.7 | 42.7 | 40.8 | 40.2 | 40.2 | 50.2 | 53.1 |
| 21 | 55.1 | 57.3 | 58.3 | 54.4 | 50.6 | 48.3 | 48.0 | 46.4 | 44.7 | 45.0 | 47.4 | 49.9 |
| 22 | 51.8 | 52.8 | 52.4 | 48.6 | 47.6 | 46.7 | 44.7 | 43.4 | 44.6 | 40.0 | 39.9 | 41.2 |
| 23 | 42.7 | 45.7 | 45.4 | 43.1 | 40.5 | 38.0 | 33.7 | 31.5 | 30.5 | 29.8 | 36.1 | 41.5 |
| 24 | 46.0 | 47.0 | 45.7 | 44.1 | 40.5 | 39.7 | 38.4 | 37.3 | 36.0 | 38.0 | 40.8 | 42.7 |
| 25 | 43.4 | 44.1 | 44.7 | 43.7 | 41.2 | 36.3 | 35.7 | 38.9 | 38.3 | 36.6 | 39.9 | 39.2 |
| 26 | 41.2 | 42.7 | 42.3 | 40.2 | 38.3 | 38.0 | 36.6 | 36.6 | 36.6 | 36.0 | 37.3 | 37.3 |
| 27 | 40.5 | 39.9 | 40.5 | 39.9 | 39.5 | 38.9 | 38.3 | 38.0 | 37.3 | 37.6 | 39.9 | 41.8 |
| 28 | 44.1 | 46.0 | 48.9 | 44.1 | 38.0 | 34.3 | 33.4 | 30.5 | 29.8 | 29.2 | 38.9 | 45.4 |
| 29 | 46.4 | 49.6 | 46.4 | 45.0 | 43.1 | 41.5 | 40.8 | 38.3 | 36.0 | 37.3 | 42.7 | 47.0 |
| 30 | 48.0 | 48.6 | 47.4 | 45.4 | 43.4 | 42.7 | 41.5 | 40.2 | 39.5 | 38.8 | 44.4 | 48.3 |
| Mean | 50.6 | 51.6 | 51.3 | 48.6 | 45.5 | 43.4 | 41.9 | 41.1 | 40.4 | 40.1 | 44.2 | 47.7 |

Reduction to Standard Thermometer 0° .

HYGROGRAPHIL.

APRIL, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 45.3 | 46.3 | 46.8 | 46.3 | 44.3 | 43.8 | 43.8 | 44.3 | 44.8 | 44.8 | 47.2 | 45.8 |
| 2 | 48.2 | 48.2 | 48.2 | 48.2 | 47.7 | 46.3 | 45.8 | 45.8 | 46.3 | 45.8 | 47.7 | 49.1 |
| 3 | 48.3 | 48.3 | 47.4 | 46.4 | 45.0 | 44.7 | 43.1 | 42.1 | 42.1 | 42.4 | 45.0 | 47.4 |
| 4 | 49.6 | 49.2 | 50.2 | 50.9 | 50.2 | 50.2 | 50.6 | 50.2 | 50.1 | 50.6 | 52.1 | 53.1 |
| 5 | 56.0 | 55.4 | 53.1 | 52.8 | 52.4 | 52.1 | 51.2 | 51.2 | 50.6 | 50.2 | 51.5 | 52.4 |
| 6 | 52.8 | 53.8 | 53.8 | 50.6 | 48.6 | 47.4 | 46.4 | 44.4 | 44.4 | 45.0 | 48.0 | 50.2 |
| 7 | 52.8 | 52.8 | 51.5 | 50.2 | 48.9 | 47.4 | 44.7 | 45.4 | 46.0 | 45.4 | 47.0 | 48.9 |
| 8 | 49.9 | 49.9 | 49.6 | 47.7 | 46.7 | 44.4 | 42.7 | 42.4 | 43.4 | 43.7 | 46.0 | 48.9 |
| 9 | 51.2 | 51.2 | 50.6 | 48.3 | 48.9 | 43.1 | 40.8 | 39.5 | 38.6 | 35.0 | 39.2 | 47.4 |
| 10 | 50.2 | 50.6 | 53.4 | 49.6 | 48.6 | 47.4 | 46.7 | 46.4 | 45.7 | 41.5 | 39.5 | 40.5 |
| 11 | 40.8 | 40.8 | 41.2 | 39.9 | 36.6 | 36.6 | 38.0 | 36.6 | 37.3 | 34.0 | 37.0 | 38.9 |
| 12 | 39.9 | 41.2 | 39.9 | 39.2 | 38.9 | 38.9 | 33.0 | 34.3 | 32.4 | 32.8 | 35.0 | 36.6 |
| 13 | 36.0 | 37.6 | 37.3 | 35.7 | 35.3 | 34.3 | 35.3 | 35.0 | 33.0 | 33.0 | 36.0 | 37.0 |
| 14 | 39.2 | 40.5 | 41.2 | 39.2 | 37.0 | 35.3 | 34.0 | 33.0 | 31.5 | 32.4 | 37.3 | 39.9 |
| 15 | 42.1 | 42.4 | 43.1 | 40.8 | 38.9 | 37.3 | 35.0 | 33.7 | 33.4 | 34.3 | 37.2 | 42.7 |
| 16 | 42.7 | 42.7 | 43.7 | 41.5 | 39.2 | 37.6 | 36.3 | 34.7 | 36.0 | 39.2 | 44.1 | 49.2 |
| 17 | 48.3 | 49.9 | 50.2 | 48.6 | 46.7 | 45.4 | 44.4 | 44.1 | 43.1 | 43.7 | 47.4 | 52.1 |
| 18 | 54.4 | 53.8 | 54.7 | 53.1 | 49.6 | 49.6 | 48.9 | 48.3 | 46.7 | 46.4 | 49.9 | 52.8 |
| 19 | 52.8 | 53.8 | 53.1 | 51.5 | 50.2 | 46.7 | 45.0 | 43.4 | 41.5 | 41.5 | 46.7 | 48.9 |
| 20 | 51.2 | 51.2 | 49.9 | 49.6 | 45.7 | 43.7 | 42.4 | 40.8 | 40.5 | 40.5 | 46.7 | 46.7 |
| 21 | 47.4 | 48.0 | 48.3 | 46.7 | 45.0 | 43.7 | 44.4 | 44.1 | 44.4 | 44.4 | 46.7 | 48.0 |
| 22 | 48.9 | 50.6 | 50.2 | 47.0 | 46.0 | 45.4 | 43.7 | 42.9 | 43.4 | 39.5 | 38.9 | 38.9 |
| 23 | 39.2 | 41.2 | 40.2 | 39.5 | 36.6 | 35.3 | 32.7 | 31.2 | 30.2 | 29.8 | 34.7 | 36.6 |
| 24 | 39.9 | 40.8 | 40.2 | 39.5 | 38.6 | 38.6 | 37.3 | 36.0 | 35.3 | 37.3 | 39.9 | 39.9 |
| 25 | 39.9 | 39.2 | 39.2 | 38.6 | 37.0 | 34.3 | 35.0 | 38.0 | 37.0 | 34.7 | 36.0 | 36.0 |
| 26 | 37.3 | 38.0 | 37.6 | 36.3 | 35.9 | 35.3 | 34.0 | 34.0 | 34.0 | 34.3 | 35.3 | 36.0 |
| 27 | 37.3 | 38.3 | 38.0 | 37.6 | 37.0 | 36.6 | 36.3 | 36.3 | 36.0 | 36.1 | 37.6 | 38.0 |
| 28 | 38.3 | 39.9 | 41.8 | 39.2 | 36.0 | 33.4 | 32.1 | 29.5 | 28.3 | 28.9 | 36.6 | 40.2 |
| 29 | 39.9 | 40.2 | 40.2 | 40.2 | 39.9 | 39.5 | 39.2 | 37.3 | 35.3 | 37.6 | 40.8 | 41.5 |
| 30 | 42.1 | 42.4 | 42.7 | 42.7 | 41.5 | 40.8 | 40.2 | 39.2 | 38.9 | 38.3 | 42.1 | 44.1 |
| Mean | 45.4 | 45.9 | 45.9 | 44.6 | 43.1 | 41.8 | 40.8 | 40.1 | 39.7 | 39.4 | 42.3 | 44.2 |

Reduction to Standard o.o.

THERMOGRAPH.

MAY, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 47.7 | 51.8 | 46.0 | 46.0 | 45.1 | 42.4 | 40.5 | 37.6 | 37.3 | 39.9 | 44.1 | 48.3 |
| 2 | 50.2 | 52.8 | 51.8 | 49.2 | 43.1 | 39.2 | 37.0 | 34.0 | 32.4 | 36.6 | 43.7 | 45.4 |
| 3 | 46.7 | 48.6 | 48.0 | 46.0 | 42.1 | 38.0 | 35.3 | 34.3 | 32.4 | 39.5 | 41.8 | 44.1 |
| 4 | 48.3 | 50.2 | 51.5 | 47.4 | 41.8 | 36.6 | 34.7 | 34.0 | 31.8 | 35.3 | 42.1 | 45.0 |
| 5 | 45.4 | 46.4 | 47.7 | 46.7 | 44.7 | 41.5 | 36.0 | 33.4 | 31.8 | 32.4 | 40.2 | 45.4 |
| 6 | 45.7 | 48.0 | 49.9 | 48.3 | 45.0 | 38.9 | 35.7 | 32.4 | 32.1 | 35.7 | 43.4 | 47.7 |
| 7 | 50.2 | 49.9 | 48.9 | 48.3 | 47.0 | 44.7 | 39.2 | 35.7 | 35.0 | 38.3 | 41.8 | 46.0 |
| 8 | 52.1 | 55.4 | 56.0 | 53.4 | 47.4 | 42.1 | 37.3 | 36.0 | 37.3 | 39.2 | 41.8 | 50.2 |
| 9 | 57.9 | 61.5 | 61.5 | 61.2 | 54.7 | 48.6 | 44.4 | 41.2 | 38.9 | 39.5 | 46.0 | 52.8 |
| 10 | 52.4 | 51.8 | 52.4 | 50.2 | 48.6 | 48.9 | 47.0 | 46.7 | 44.4 | 47.0 | 49.2 | 50.2 |
| 11 | 51.2 | 54.7 | 57.9 | 55.7 | 53.8 | 51.8 | 50.9 | 50.6 | 47.7 | 49.6 | 53.4 | 57.0 |
| 12 | 57.3 | 58.6 | 57.6 | 57.6 | 56.0 | 54.4 | 53.1 | 52.8 | 52.8 | 53.1 | 56.0 | 60.9 |
| 13 | 65.8 | 67.1 | 66.1 | 65.4 | 61.5 | 57.9 | 54.4 | 54.4 | 53.4 | 52.4 | 58.6 | 64.8 |
| 14 | 70.0 | 70.9 | 70.0 | 64.4 | 59.9 | 55.1 | 51.8 | 49.2 | 48.3 | 51.5 | 60.9 | 61.2 |
| 15 | 67.1 | 66.1 | 67.7 | 65.4 | 62.8 | 59.6 | 57.0 | 56.3 | 53.4 | 52.4 | 57.9 | 61.5 |
| 16 | 65.4 | 69.3 | 70.3 | 64.1 | 57.3 | 52.4 | 49.9 | 48.0 | 45.4 | 48.1 | 55.1 | 59.9 |
| 17 | 63.1 | 66.8 | 68.3 | 65.1 | 57.6 | 52.4 | 48.6 | 46.0 | 45.0 | 47.0 | 54.4 | 62.8 |
| 18 | 67.4 | 68.0 | 66.1 | 62.5 | 56.0 | 52.4 | 50.9 | 49.2 | 48.6 | 51.2 | 54.7 | 57.9 |
| 19 | 62.1 | 66.1 | 63.1 | 61.5 | 57.0 | 53.8 | 53.4 | 52.4 | 51.5 | 51.2 | 54.4 | 60.6 |
| 20 | 63.4 | 63.7 | 61.5 | 55.7 | 54.7 | 54.7 | 53.1 | 52.1 | 52.1 | 53.1 | 53.8 | 56.6 |
| 21 | 55.4 | 56.0 | 55.1 | 52.4 | 51.8 | 48.6 | 46.4 | 46.0 | 45.7 | 46.7 | 49.6 | 55.1 |
| 22 | 55.7 | 57.3 | 57.0 | 55.4 | 52.6 | 48.9 | 48.3 | 48.3 | 47.7 | 47.7 | 48.0 | 48.9 |
| 23 | 52.1 | 58.3 | 59.9 | 63.1 | 60.9 | 58.9 | 56.6 | 53.4 | 52.1 | 49.9 | 50.9 | 57.0 |
| 24 | 61.8 | 62.8 | 61.2 | 58.9 | 57.0 | 51.8 | 49.9 | 46.0 | 44.7 | 49.2 | 57.0 | 62.1 |
| 25 | 63.7 | 68.0 | 65.1 | 62.1 | 57.9 | 55.1 | 51.5 | 48.6 | 48.0 | 49.9 | 54.7 | 57.9 |
| 26 | 59.9 | 60.9 | 61.5 | 60.6 | 55.7 | 52.1 | 51.2 | 49.2 | 48.0 | 50.9 | 56.3 | 59.6 |
| 27 | 62.8 | 64.1 | 65.4 | 62.8 | 57.9 | 51.5 | 47.0 | 44.1 | 41.2 | 48.3 | 54.7 | 61.8 |
| 28 | 62.8 | 64.8 | 63.7 | 61.5 | 56.3 | 52.8 | 52.4 | 51.2 | 49.2 | 49.2 | 51.2 | 53.8 |
| 29 | 57.3 | 57.9 | 59.3 | 58.9 | 57.6 | 54.1 | 53.1 | 50.6 | 50.0 | 50.6 | 53.4 | 56.6 |
| 30 | 61.5 | 63.7 | 61.4 | 59.9 | 55.1 | 50.2 | 47.0 | 46.7 | 47.4 | 49.6 | 52.4 | 59.9 |
| 31 | 64.1 | 65.4 | 64.1 | 61.2 | 55.1 | 49.6 | 44.1 | 41.2 | 39.5 | 45.4 | 52.4 | 60.3 |
| Mean | 57.6 | 59.2 | 59.2 | 57.1 | 53.3 | 49.7 | 47.0 | 45.2 | 44.0 | 46.1 | 50.7 | 55.1 |

Reduction to Standard Thermometer + 0°.5.

HYGROGRAPH.

MAY, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------------------------|--------|------|------|------|------|---------|-------|-------|--------|-------|-------|---------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 43.7 | 45.4 | 43.4 | 43.1 | 41.5 | 40.8 | 39.9 | 37.6 | 37.5 | 39.9 | 42.4 | 44.4 |
| 2 | 44.1 | 45.7 | 45.4 | 43.7 | 39.9 | 37.3 | 35.3 | 33.4 | 32.1 | 35.7 | 41.2 | 42.1 |
| 3 | 42.4 | 44.1 | 43.1 | 40.8 | 39.2 | 36.0 | 34.3 | 34.0 | 33.4 | 37.6 | 39.5 | 39.9 |
| 4 | 41.8 | 43.7 | 43.4 | 40.5 | 37.6 | 35.0 | 34.1 | 33.0 | 31.2 | 34.3 | 39.5 | 40.5 |
| 5 | 40.5 | 41.8 | 41.8 | 41.8 | 41.2 | 38.6 | 35.0 | 33.0 | 31.8 | 32.4 | 39.2 | 42.7 |
| 6 | 42.7 | 44.1 | 44.4 | 43.7 | 41.2 | 37.3 | 35.0 | 32.4 | 32.1 | 35.3 | 41.2 | 42.4 |
| 7 | 44.4 | 44.4 | 44.1 | 44.1 | 43.1 | 41.8 | 38.3 | 35.3 | 35.3 | 38.3 | 40.5 | 42.4 |
| 8 | 45.7 | 47.4 | 47.0 | 45.7 | 42.4 | 38.9 | 36.0 | 35.7 | 37.3 | 38.9 | 41.2 | 46.0 |
| 9 | 49.9 | 51.8 | 52.8 | 53.8 | 47.7 | 44.1 | 41.8 | 39.9 | 38.6 | 39.9 | 44.7 | 49.6 |
| 10 | 49.2 | 49.9 | 49.2 | 47.7 | 47.0 | 47.0 | 46.0 | 45.7 | 45.7 | 46.7 | 49.2 | 49.2 |
| 11 | 50.2 | 53.1 | 54.7 | 53.4 | 52.1 | 50.9 | 50.2 | 50.6 | 47.4 | 48.6 | 50.9 | 53.8 |
| 12 | 54.4 | 55.7 | 55.4 | 55.4 | 54.4 | 53.1 | 52.4 | 52.1 | 51.8 | 52.1 | 53.8 | 56.3 |
| 13 | 57.9 | 57.9 | 57.0 | 57.0 | 56.3 | 54.4 | 52.1 | 52.4 | 52.4 | 51.8 | 55.7 | 58.3 |
| 14 | 61.2 | 61.2 | 60.9 | 58.6 | 56.0 | 53.4 | 50.6 | 48.9 | 48.0 | 50.6 | 57.3 | 57.6 |
| 15 | 59.6 | 60.6 | 62.5 | 59.6 | 58.3 | 57.0 | 55.7 | 55.1 | 52.4 | 52.4 | 56.0 | 59.3 |
| 16 | 61.2 | 61.2 | 59.9 | 55.4 | 52.4 | 49.2 | 48.6 | 47.4 | 45.0 | 47.4 | 52.1 | 53.8 |
| 17 | 54.7 | 56.0 | 57.0 | 56.3 | 52.1 | 48.0 | 46.7 | 45.4 | 44.7 | 47.0 | 51.8 | 56.6 |
| 18 | 56.6 | 59.6 | 57.9 | 55.7 | 53.1 | 50.6 | 48.6 | 47.4 | 47.7 | 49.6 | 52.4 | 54.1 |
| 19 | 55.1 | 57.9 | 56.6 | 56.6 | 54.7 | 52.4 | 51.8 | 50.9 | 49.9 | 48.9 | 51.5 | 54.4 |
| 20 | 55.4 | 57.0 | 55.1 | 52.1 | 51.5 | 51.5 | 50.6 | 50.2 | 50.2 | 51.2 | 51.8 | 53.4 |
| 21 | 53.4 | 53.4 | 53.1 | 50.9 | 49.6 | 48.0 | 45.7 | 45.7 | 45.4 | 46.4 | 48.6 | 50.6 |
| 22 | 50.6 | 50.9 | 50.9 | 50.6 | 49.2 | 47.7 | 47.0 | 47.7 | 46.4 | 47.0 | 47.4 | 48.6 |
| 23 | 51.2 | 55.7 | 54.4 | 58.9 | 58.3 | 57.0 | 54.4 | 52.1 | 51.8 | 48.9 | 48.9 | 51.5 |
| 24 | ... | ... | ... | ... | ... | *(48.7) | ... | ... | ... | ... | ... | *(55.5) |
| 25 | ... | ... | ... | ... | ... | *(53.5) | ... | ... | ... | ... | ... | *(54.0) |
| 26 | * 55.1 | 56.3 | 56.0 | 54.7 | 51.5 | 49.9 | 49.2 | 47.7 | 47.4 | 50.6 | 54.1 | 55.1 |
| 27 | 56.6 | 56.6 | 56.3 | 53.4 | 52.8 | 49.9 | 46.7 | 43.7 | 41.8 | 46.7 | 52.1 | 56.0 |
| 28 | 56.6 | 57.0 | 57.6 | 56.3 | 53.8 | 51.2 | 51.2 | 50.2 | 48.3 | 48.3 | 49.2 | 51.2 |
| 29 | 53.1 | 53.1 | 54.1 | 54.4 | 54.1 | 49.6 | 48.9 | 48.0 | 48.0 | 48.3 | 49.9 | 49.9 |
| 30 | 53.1 | 53.1 | 54.1 | 52.4 | 51.2 | 48.0 | 45.7 | 45.4 | 45.7 | 47.4 | 49.9 | 53.4 |
| 31 | 53.8 | 52.1 | 53.1 | 51.5 | 48.3 | 46.3 | 43.4 | 40.2 | * 41.0 | 41.8 | 47.4 | 52.4 |
| Mean of 29 days. | 51.5 | 52.6 | 52.5 | 51.3 | 49.3 | 47.1 | 45.4 | 44.2 | 43.5 | 45.0 | 48.3 | 50.5 |

Reduction to Standard + 0°.4.

* Eye observations.

THERMOGRAPH.

JUNE, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 63.1 | 63.1 | 63.1 | 59.9 | 53.8 | 50.6 | 46.4 | 41.8 | 40.5 | 47.4 | 58.6 | 64.1 |
| 2 | 60.3 | 58.6 | 58.3 | 59.9 | 58.3 | 54.4 | 51.2 | 51.5 | 51.5 | 53.1 | 55.7 | 63.1 |
| 3 | 66.4 | 69.6 | 65.4 | 59.6 | 58.9 | 57.0 | 55.7 | 54.7 | 55.1 | 56.6 | 59.9 | 65.4 |
| 4 | 67.4 | 69.0 | 71.2 | 70.3 | 63.7 | 58.6 | 55.7 | 54.1 | 54.1 | 58.9 | 63.4 | 74.5 |
| 5 | 78.0 | 78.7 | 77.7 | 73.1 | 67.1 | 63.7 | 62.5 | 60.9 | 59.9 | 63.4 | 66.8 | 69.6 |
| 6 | 72.8 | 73.1 | 71.8 | 72.2 | 69.0 | 64.8 | 63.4 | 62.5 | 61.2 | 61.2 | 60.9 | 61.5 |
| 7 | 63.1 | 68.0 | 66.4 | 63.4 | 60.6 | 57.6 | 55.7 | 54.4 | 53.4 | 55.7 | 57.3 | 60.6 |
| 8 | 62.5 | 60.6 | 63.1 | 60.3 | 56.0 | 53.8 | 53.1 | 52.1 | 53.1 | 54.4 | 57.0 | 60.6 |
| 9 | 61.2 | 61.2 | 56.6 | 54.1 | 53.8 | 52.4 | 51.2 | 50.6 | 47.7 | 52.1 | 55.1 | 60.3 |
| 10 | 62.8 | 59.9 | 62.5 | 60.6 | 59.3 | 53.4 | 51.8 | 48.3 | 48.0 | 53.8 | 56.6 | 60.6 |
| 11 | 62.5 | 63.7 | 60.6 | 56.6 | 53.4 | 48.9 | 45.4 | 43.4 | 44.7 | 50.6 | 52.8 | 56.6 |
| 12 | 60.3 | 60.9 | 61.8 | 61.2 | 56.6 | 50.9 | 47.7 | 44.1 | 41.2 | 47.0 | 53.4 | 59.3 |
| 13 | 63.4 | 66.4 | 67.1 | 63.1 | 57.0 | 51.8 | 48.6 | 43.4 | 40.5 | 52.8 | 55.4 | 60.3 |
| 14 | 64.4 | 66.1 | 66.4 | 62.8 | 56.3 | 49.9 | 47.0 | 45.4 | 44.7 | 53.4 | 58.6 | 61.5 |
| 15 | 65.1 | 65.4 | 64.8 | 61.5 | 55.4 | 52.1 | 47.0 | 43.4 | 43.1 | 50.2 | 55.4 | 59.6 |
| 16 | 62.5 | 58.9 | 54.1 | 54.4 | 52.8 | 52.8 | 51.8 | 51.5 | 51.5 | 51.8 | 55.7 | 59.6 |
| 17 | (64.8) | (67.7) | (68.0) | (63.7) | (58.6) | ... | ... | ... | ... | ... | (53.4) | (55.4) |
| 18 | 59.6 | 63.1 | 62.8 | 59.9 | 56.0 | 53.4 | 51.2 | 50.2 | 49.9 | 52.8 | 58.3 | * 64.1 |
| 19 | ... | ... | ... | (70.3) | (66.4) | (65.4) | (61.8) | (61.2) | (60.9) | (60.9) | (64.8) | (72.8) |
| 20 | 77.3 | 77.7 | 80.6 | 76.4 | 69.0 | 66.1 | 64.1 | 63.7 | 62.5 | 61.8 | 65.1 | 69.6 |
| 21 | 72.8 | 72.8 | 69.3 | 65.4 | 64.8 | 63.1 | 59.9 | 56.3 | 56.0 | 56.6 | 57.6 | 64.1 |
| 22 | 70.0 | 72.8 | 75.1 | 74.1 | 69.0 | 64.4 | 60.6 | 58.3 | 56.6 | 62.5 | 66.8 | 71.5 |
| 23 | 76.1 | 79.3 | 80.0 | 76.7 | 69.6 | 66.8 | 63.1 | 59.6 | 59.3 | 64.8 | 70.0 | 55.7 |
| 24 | 77.7 | 79.3 | 80.6 | 75.7 | 69.0 | 62.1 | 56.6 | 54.1 | 53.1 | 61.5 | 67.7 | 72.8 |
| 25 | 78.0 | 80.9 | 81.8 | 77.7 | 71.2 | 65.8 | 57.6 | 56.0 | 53.4 | 62.1 | 68.0 | 73.7 |
| 26 | 78.7 | 79.6 | 80.6 | 79.3 | 73.7 | 64.8 | 60.3 | 56.6 | 55.1 | 60.9 | 66.4 | 73.7 |
| 27 | 80.0 | 80.3 | 82.5 | 80.6 | 72.8 | 67.4 | 61.8 | 58.9 | 58.9 | 67.7 | 69.0 | 77.0 |
| 28 | 82.9 | 82.5 | 79.3 | 76.7 | 71.2 | 66.4 | 61.8 | 60.9 | 60.9 | 61.2 | 63.7 | 66.4 |
| 29 | 68.6 | 72.8 | 69.0 | 65.8 | 61.8 | 59.9 | 58.9 | 58.9 | 58.6 | 60.9 | 61.8 | 62.1 |
| 30 | 65.8 | 61.2 | 64.1 | 61.5 | 59.3 | 58.3 | 57.6 | 57.6 | 57.0 | 57.9 | 58.9 | 59.3 |
| Mean of 28 days. | 68.7 | 69.5 | 69.2 | 66.5 | 62.1 | 58.2 | 55.3 | 53.3 | 52.6 | 56.9 | 60.6 | 64.5 |

Reduction to Standard Thermometer — $0^{\circ}.5$.

* Eye observation.

HYGROGRAPH.

JUNE, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------------------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | * 53.1 | 53.8 | 54.4 | 51.5 | 47.4 | 46.0 | 44.0 | 41.8 | * 42.8 | 43.7 | 52.1 | 54.1 |
| 2 | 53.1 | 54.1 | 53.4 | 55.1 | 54.7 | 52.1 | 50.2 | 50.2 | 50.2 | 51.5 | 53.8 | 57.9 |
| 3 | 57.9 | 60.6 | 59.9 | 57.6 | 57.3 | 55.1 | 53.8 | 52.8 | 53.1 | 54.1 | 56.0 | 58.3 |
| 4 | 60.6 | 60.6 | 60.6 | 59.3 | 57.3 | 54.4 | 52.8 | 51.2 | 51.2 | 55.1 | 58.9 | 62.8 |
| 5 | * 62.8 | 62.8 | 62.8 | 61.8 | 60.6 | 58.6 | 58.6 | 58.3 | 57.9 | 59.9 | 61.8 | 62.8 |
| 6 | 63.1 | 64.1 | 63.4 | 64.1 | 62.8 | 62.5 | 61.8 | 60.9 | 59.6 | 59.6 | * 59.9 | 60.3 |
| 7 | 61.2 | 62.8 | 62.1 | 58.9 | 57.6 | 55.7 | 53.4 | 51.8 | 50.6 | 51.8 | 52.8 | 54.1 |
| 8 | 55.4 | 55.4 | 55.7 | 53.1 | 51.5 | 50.9 | 50.9 | 50.2 | 50.9 | 51.8 | 53.1 | 53.8 |
| 9 | 54.7 | 54.7 | 52.8 | 52.1 | 52.1 | 51.2 | 49.2 | 48.9 | 47.0 | 48.0 | 51.2 | 53.4 |
| 10 | 55.1 | 54.7 | 54.7 | 55.4 | 52.8 | 49.9 | 48.6 | 46.7 | 46.7 | 51.2 | 52.1 | 51.8 |
| 11 | ... | ... | (51.8) | (50.9) | (48.3) | (45.0) | (42.7) | (42.1) | (42.1) | (46.0) | (48.0) | (49.9) |
| 12 | 51.5 | 51.5 | 51.5 | 53.1 | 50.9 | 48.3 | 45.7 | 43.1 | 40.8 | 44.7 | 49.9 | 51.5 |
| 13 | 53.4 | 54.7 | 55.4 | 52.8 | 50.6 | 48.0 | 45.0 | 41.8 | 40.2 | 46.7 | 48.9 | 49.6 |
| 14 | 53.4 | 55.4 | 54.7 | 51.8 | 49.2 | 46.7 | 45.0 | 43.4 | 43.4 | 49.6 | 51.2 | 51.8 |
| 15 | 53.1 | 53.8 | 53.1 | 51.8 | 49.2 | 47.4 | 43.4 | 41.8 | 42.4 | 48.0 | 49.9 | 51.5 |
| 16 | 53.1 | 51.8 | 49.9 | 49.2 | 49.2 | 50.2 | 48.9 | 49.2 | 49.6 | 49.9 | 50.6 | 53.8 |
| 17 | (56.3) | (57.3) | (57.6) | (54.7) | (51.5) | *(47.0) | ... | ... | ... | ... | (51.5) | (52.1) |
| 18 | 54.7 | 56.6 | 56.0 | 54.7 | 52.4 | 50.9 | 49.2 | 48.3 | 48.6 | 50.6 | * 54.9 | * 59.2 |
| 19 | ... | ... | ... | (62.8) | (62.5) | (60.6) | (58.9) | (59.9) | (59.3) | (58.9) | (62.1) | (66.8) |
| 20 | 66.8 | 67.7 | 67.7 | 66.8 | 65.4 | 62.8 | 61.8 | 61.5 | 60.9 | 59.9 | 62.5 | 64.4 |
| 21 | 64.4 | 65.1 | 63.1 | 63.1 | 62.5 | 61.2 | 57.9 | 55.7 | 55.4 | 55.7 | 56.3 | 60.6 |
| 22 | 64.4 | 65.4 | 66.1 | 65.8 | 64.4 | 61.2 | 58.6 | 57.3 | 55.7 | 59.6 | 62.8 | 66.1 |
| 23 | 67.4 | 68.6 | 68.6 | 68.3 | 65.8 | 64.4 | 60.3 | 56.6 | 55.7 | 60.3 | 62.1 | 62.5 |
| 24 | 63.1 | 64.4 | 65.8 | 63.7 | 61.2 | 57.0 | 54.7 | 52.4 | 51.2 | 56.3 | 59.6 | 61.5 |
| 25 | 63.7 | 65.1 | 64.4 | 62.8 | 61.2 | 57.6 | 54.7 | 53.8 | 51.5 | 56.6 | 60.6 | 61.5 |
| 26 | 63.1 | 64.4 | 65.1 | 62.8 | 62.8 | 59.6 | 56.6 | 54.7 | 53.8 | 57.9 | 61.5 | 64.4 |
| 27 | 65.8 | 67.1 | 68.3 | 65.8 | 63.7 | 60.6 | 58.3 | 56.6 | 54.7 | 60.6 | 62.1 | 65.8 |
| 28 | 68.3 | 67.7 | 67.1 | 65.8 | 63.7 | 62.1 | 58.9 | 58.3 | 57.9 | 57.3 | 58.6 | 59.6 |
| 29 | 59.6 | 59.6 | 58.6 | 57.6 | 57.6 | 56.6 | 56.0 | 56.6 | 56.6 | 57.6 | 58.6 | 58.6 |
| 30 | 61.2 | 57.9 | 59.6 | 57.0 | 57.0 | 56.6 | 56.0 | 56.3 | 56.0 | 56.0 | 57.3 | 57.3 |
| Mean of 27 days. | 59.4 | 60.0 | 59.8 | 58.6 | 57.1 | 54.7 | 53.1 | 51.9 | 51.3 | 53.9 | 55.9 | 58.5 |

Reduction to Standard 0°.

* Eye observations.

THERMOGRAPH.

JULY, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------------------|---------------------------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|--------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 60.9 | 58.3 | 58.6 | 57.0 | 55.1 | 54.4 | 52.1 | 49.9 | 50.6 | 52.4 | 55.4 | 59.9 |
| 2 | 61.5 | 64.8 | 67.7 | 64.4 | 61.5 | 60.3 | 58.3 | 57.3 | 57.0 | 57.6 | 59.9 | 63.1 |
| 3 | 64.1 | 62.5 | 59.6 | 60.6 | 58.9 | 57.9 | 57.9 | 56.6 | 57.6 | 58.6 | 59.3 | 60.3 |
| 4 | 59.6 | 61.8 | 63.1 | 64.8 | 61.8 | 59.9 | 59.6 | 58.6 | 55.1 | 61.8 | 60.3 | 64.8 |
| 5 | 66.8 | 64.1 | 63.1 | 63.4 | 58.3 | 57.9 | 57.3 | 56.3 | 57.0 | 57.3 | 56.3 | 59.6 |
| 6 | 63.1 | 58.6 | 61.5 | 52.8 | 54.7 | 52.4 | 52.8 | 53.1 | 53.8 | 53.8 | 51.8 | 56.6 |
| 7 | 59.9 | 61.5 | 60.6 | 59.9 | 56.6 | 51.8 | 49.2 | 47.4 | 46.4 | 55.1 | 56.3 | 58.9 |
| 8 | 60.3 | 61.5 | 63.1 | 60.9 | 55.7 | 50.2 | 48.9 | 53.4 | 49.2 | 57.0 | 59.9 | 61.8 |
| 9 | 66.1 | 68.3 | 68.6 | 64.8 | 59.9 | 54.7 | 54.1 | 53.1 | 52.4 | 56.3 | 62.1 | 67.1 |
| 10 | 69.6 | 69.0 | 70.6 | 66.4 | 63.4 | 60.6 | 60.3 | 59.9 | 59.6 | 59.3 | 63.1 | 67.7 |
| 11 | 69.6 | 66.8 | 69.3 | 69.3 | 63.4 | 59.9 | 57.6 | 57.9 | 56.6 | 62.8 | 64.4 | 69.6 |
| 12 | 73.1 | 75.1 | 75.7 | 73.4 | 68.3 | 64.8 | 60.3 | 57.0 | 57.0 | 61.2 | 63.4 | 65.1 |
| 13 | 72.5 | 74.5 | 75.1 | 72.2 | 67.1 | 61.5 | 57.6 | 56.6 | 57.9 | 60.6 | 66.1 | 72.2 |
| 14 | 74.8 | 78.7 | 80.6 | 77.7 | 70.9 | 64.1 | 60.9 | 58.3 | 55.1 | 60.6 | 64.8 | 70.6 |
| 15 | 76.7 | 78.7 | 77.3 | 72.2 | 65.8 | 62.5 | 58.6 | 56.3 | 55.7 | 56.6 | 63.1 | 65.8 |
| 16 | 70.0 | 69.6 | 69.3 | 63.4 | 60.6 | 57.6 | 55.1 | 52.1 | 50.9 | 50.9 | 58.3 | 64.8 |
| 17 | 70.6 | 72.8 | 71.5 | 70.3 | 64.4 | 60.6 | 59.3 | 57.0 | 56.6 | 58.3 | 64.8 | 69.0 |
| 18 | 70.0 | 71.8 | 72.8 | 72.5 | 68.0 | 63.1 | 60.3 | 59.3 | 58.3 | 58.6 | 64.1 | 71.5 |
| 19 | 77.3 | 80.6 | 80.0 | 76.1 | 70.3 | 67.7 | 65.1 | 61.2 | 59.3 | 63.7 | 66.8 | 71.2 |
| 20 | (76.7) | (76.4) | (74.5) | (68.0) | (63.1) | (59.3) | ... | ... | ... | ... | ... | (65.8) |
| 21 | 68.3 | 67.1 | 65.8 | 62.8 | 62.8 | 62.5 | 63.1 | 63.4 | 62.8 | 63.1 | 66.8 | 67.4 |
| 22 | 70.3 | 72.5 | 73.7 | 71.2 | 67.4 | 64.1 | 63.7 | 62.5 | 62.8 | 63.4 | 66.4 | 69.3 |
| 23 | 71.5 | 73.1 | 70.9 | 69.6 | 64.8 | 61.5 | 59.3 | 60.3 | 59.3 | 61.5 | 65.8 | 72.2 |
| 24 | 77.3 | 77.0 | 76.7 | 73.1 | 67.4 | 62.1 | 61.5 | 62.5 | 63.4 | 65.1 | 63.4 | 66.4 |
| 25 | 70.0 | 71.5 | 71.2 | 66.4 | 60.3 | 56.6 | 54.4 | 51.2 | 51.8 | 58.3 | 62.8 | 63.7 |
| 26 | 68.3 | 68.6 | 69.6 | 67.1 | 62.1 | 59.9 | 57.9 | 58.3 | 58.9 | 59.9 | 62.8 | 65.1 |
| 27 | 72.8 | 74.5 | 70.6 | 67.7 | 64.4 | 63.1 | 61.8 | 61.5 | 59.9 | 60.3 | 59.9 | 64.4 |
| 28 | 68.0 | 69.6 | 70.6 | 69.6 | 63.7 | 58.9 | 54.4 | 51.8 | 48.9 | 53.1 | 58.6 | 64.1 |
| 29 | 69.6 | 71.5 | 73.4 | 72.5 | 67.7 | 63.1 | 58.9 | 55.4 | 54.4 | 57.3 | 60.3 | 66.4 |
| 30 | 68.6 | 71.2 | 69.6 | 67.7 | 65.4 | 63.1 | 63.1 | 62.8 | 62.1 | 63.7 | 66.8 | 69.6 |
| 31 | 74.1 | 73.1 | 72.8 | 70.6 | 65.1 | 61.5 | 61.8 | 62.5 | 62.5 | 62.8 | 63.4 | 69.0 |
| Mean of 30 days. | 68.8 | 69.6 | 69.8 | 67.3 | 63.2 | 59.9 | 58.2 | 57.1 | 56.1 | 59.0 | 62.0 | 65.9 |

Reduction to Standard Thermometer — °°3.

HYGROGRAPH.

JULY, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------------------|---------------------------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|---------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 57.3 | 55.7 | 54.7 | 53.4 | 51.2 | 50.6 | 48.6 | 47.4 | 48.0 | 49.6 | 51.5 | 53.1 |
| 2 | 53.8 | 55.4 | 56.3 | 54.7 | 54.1 | 54.4 | 54.7 | 54.1 | 54.1 | 54.7 | 54.7 | 57.0 |
| 3 | 56.6 | 56.0 | 55.7 | 56.6 | 55.1 | 54.4 | 55.4 | 55.4 | 56.3 | 57.3 | 57.6 | 58.6 |
| 4 | 57.6 | 57.9 | 59.3 | 58.9 | 58.6 | 58.3 | 57.9 | 56.6 | 54.1 | 58.3 | 57.0 | 59.6 |
| 5 | 60.6 | 59.9 | 61.2 | 60.6 | 57.0 | 56.6 | 56.0 | 55.4 | 55.7 | 55.7 | 51.8 | 52.8 |
| 6 | 53.1 | 54.7 | 54.7 | 50.2 | 51.2 | 49.9 | 49.9 | 51.5 | 52.1 | 49.9 | 49.9 | 50.6 |
| 7 | 51.5 | 52.8 | 53.1 | 52.1 | 51.5 | 48.6 | 47.0 | 46.0 | 45.4 | 50.6 | 50.6 | 52.1 |
| 8 | 53.1 | 53.4 | 54.7 | 53.4 | 50.6 | 48.0 | 46.7 | 48.3 | 48.3 | 53.1 | 52.8 | 54.7 |
| 9 | 57.6 | 57.9 | 57.9 | 56.3 | 56.3 | 51.5 | 52.4 | 51.2 | 50.6 | 53.4 | 57.3 | 58.9 |
| 10 | 60.9 | 60.6 | 61.2 | 59.9 | 58.9 | 58.3 | 57.9 | 57.9 | 57.6 | 57.0 | 59.3 | 59.9 |
| 11 | 61.2 | 60.3 | 60.9 | 61.5 | 59.6 | 57.6 | 56.3 | 56.6 | 55.1 | 59.3 | 60.6 | 63.1 |
| 12 | 64.8 | 65.4 | 66.1 | 64.8 | 63.1 | 61.2 | 58.6 | 55.7 | 55.7 | 58.3 | 62.8 | 61.2 |
| 13 | 63.1 | 64.4 | 64.4 | 62.8 | 61.5 | 58.6 | 56.3 | 55.4 | 56.3 | 58.3 | 61.2 | 63.7 |
| 14 | 65.4 | 66.1 | 67.7 | 66.1 | 63.7 | 60.6 | 57.9 | 56.3 | 54.1 | 57.3 | 59.9 | 62.8 |
| 15 | 63.7 | 64.4 | 63.7 | 60.9 | 59.9 | 57.9 | 55.7 | 54.4 | 54.7 | 55.4 | 59.6 | 60.6 |
| 16 | 60.6 | 59.6 | 57.6 | 57.6 | 57.3 | 55.7 | 52.8 | 51.2 | 50.2 | 50.2 | 54.7 | 57.3 |
| 17 | ... | (61.2) | ... | (60.9) | (57.9) | (56.3) | (56.3) | (56.0) | (56.3) | (57.9) | (60.6) | (62.5) |
| 18 | (64.1) | (64.4) | ... | (65.4) | (62.8) | (60.3) | (58.9) | (57.9) | ... | (56.6) | (61.2) | (62.8) |
| 19 | ... | (66.4) | ... | (64.8) | (63.7) | (62.1) | (60.3) | (57.9) | ... | ... | ... | *(62.6) |
| 20 | ... | ... | ... | ... | ... | *(54.8) | ... | ... | ... | ... | ... | (58.6) |
| 21 | 59.9 | 59.6 | 60.6 | 60.6 | 59.9 | 60.3 | 60.6 | 60.9 | 60.3 | 60.3 | 62.5 | 61.8 |
| 22 | (62.1) | (61.8) | (61.2) | (60.6) | (58.9) | (58.9) | (58.9) | (59.3) | (60.6) | ... | ... | *(64.0) |
| 23 | ... | ... | ... | (61.5) | (59.3) | (57.9) | (57.3) | (57.9) | (57.3) | (58.6) | (60.6) | (61.5) |
| 24 | 63.7 | 63.7 | 64.1 | 62.8 | 60.3 | 58.9 | 58.3 | 59.3 | 60.6 | 61.2 | 61.8 | 62.1 |
| 25 | 61.2 | 57.9 | 59.9 | 57.0 | 54.7 | 53.1 | 52.1 | 49.9 | 50.6 | 53.8 | 57.9 | 56.6 |
| 26 | 57.9 | 58.3 | 57.6 | 57.3 | 56.0 | 54.7 | 54.1 | 54.7 | 55.7 | 57.0 | 59.9 | 61.2 |
| 27 | 64.4 | 64.4 | 64.4 | 65.1 | 62.8 | 61.8 | 60.3 | 60.3 | 58.9 | 58.9 | 57.9 | 59.3 |
| 28 | 58.9 | 57.9 | 59.6 | 58.6 | 57.6 | 54.7 | 53.1 | 50.9 | 48.3 | 50.2 | 52.8 | 55.4 |
| 29 | 60.3 | 61.2 | 62.8 | 62.1 | 60.6 | 58.6 | 56.3 | 53.8 | 52.8 | 53.1 | 56.3 | 60.6 |
| 30 | * 63.4 | * 64.4 | * 63.1 | * 62.8 | * 61.5 | 60.6 | 60.6 | 59.9 | 59.6 | 60.6 | 61.5 | 62.8 |
| 31 | 63.1 | 63.7 | 64.1 | 62.8 | 60.3 | 58.9 | 58.9 | 60.3 | 58.6 | 59.9 | 61.5 | 62.8 |
| Mean of 25 days. | 59.7 | 59.8 | 60.2 | 59.6 | 57.7 | 56.2 | 55.1 | 54.5 | 54.1 | 55.7 | 57.4 | 58.8 |

Reduction to Standard + 0°.2.

* Eye observations.

THERMOGRAPH.

AUGUST, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------------------------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--------|--------|--------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 72.2 | 73.1 | 74.1 | 70.9 | 67.4 | 66.4 | 60.9 | 59.3 | 60.9 | 62.8 | 66.4 | 71.2 |
| 2 | 76.1 | 75.1 | 77.3 | 72.8 | 68.0 | 63.1 | 61.2 | 58.9 | 57.6 | 58.9 | 64.4 | 70.0 |
| 3 | 79.3 | 81.8 | 80.6 | 76.1 | 70.3 | 66.4 | 64.4 | 63.7 | 61.2 | 62.8 | 67.7 | 72.8 |
| 4 | 76.1 | 74.8 | 72.8 | 72.8 | 69.0 | 66.4 | 63.1 | 59.9 | 58.9 | 59.6 | 62.1 | 64.8 |
| 5 | 71.5 | 72.8 | 72.8 | 69.6 | 64.4 | 62.8 | 59.9 | 60.6 | 59.9 | 59.9 | 59.9 | 59.9 |
| 6 | 66.1 | 64.4 | 61.2 | 58.6 | 56.6 | 55.1 | 53.8 | 53.4 | 53.1 | 53.4 | 54.7 | 56.6 |
| 7 | 56.6 | 56.3 | 56.3 | 55.7 | 55.7 | 55.7 | 55.7 | 55.1 | 54.4 | 54.1 | 55.4 | 58.3 |
| 8 | 62.1 | 57.6 | 57.3 | 57.3 | 57.0 | 56.6 | 56.6 | 56.0 | 55.4 | 56.6 | 58.9 | 62.5 |
| 9 | 65.1 | 66.4 | 60.3 | 62.1 | 58.6 | 57.9 | 55.1 | 52.8 | 50.6 | 50.2 | 56.6 | 64.1 |
| 10 | 69.6 | 71.8 | 69.6 | 66.1 | 63.7 | 63.4 | 61.5 | 61.8 | 61.2 | 62.5 | 65.4 | 69.6 |
| 11 | 74.8 | 72.8 | 70.3 | 66.4 | 65.1 | 62.8 | 60.6 | 57.6 | 58.6 | 58.3 | 62.5 | 68.3 |
| 12 | 73.4 | 76.1 | 74.1 | 73.4 | 66.1 | 64.8 | 61.8 | 59.9 | 59.6 | 61.5 | 66.4 | 71.8 |
| 13 | 75.4 | 76.1 | 79.3 | 74.5 | 65.4 | 62.5 | 61.5 | 61.8 | 60.3 | 59.9 | 60.9 | 61.8 |
| 14 | 66.4 | 69.0 | 64.8 | 58.9 | 58.6 | 58.6 | 56.0 | 53.4 | 51.5 | 52.1 | 58.3 | 63.1 |
| 15 | (66.4) | (67.4) | (68.6) | (65.8) | (64.1) | (56.6) | ... | ... | ... | (62.8) | (66.1) | (71.5) |
| 16 | 77.0 | 77.3 | 76.7 | 72.8 | 67.1 | 63.1 | 60.3 | 58.9 | 58.9 | 58.9 | 61.5 | 65.4 |
| 17 | 68.3 | 69.6 | 70.9 | 67.4 | 60.6 | 56.0 | 51.8 | 50.9 | 50.9 | 53.4 | 60.9 | 64.8 |
| 18 | 66.4 | 67.7 | 66.4 | 63.1 | 60.6 | 61.2 | 59.3 | 58.3 | 57.6 | 57.3 | 61.5 | 66.1 |
| 19 | 69.6 | 73.1 | 73.4 | 70.9 | 68.6 | 67.1 | 66.4 | 65.8 | 64.8 | 64.1 | 66.1 | 67.1 |
| 20 | 72.2 | 72.5 | 72.8 | 67.1 | 63.4 | 59.9 | 58.6 | 57.6 | 56.6 | 56.6 | 58.9 | 61.5 |
| 21 | 66.8 | 69.3 | 70.3 | 66.4 | 61.8 | 61.2 | 62.1 | 61.5 | 61.2 | 60.9 | 62.5 | 65.4 |
| 22 | 72.2 | 76.7 | 76.7 | 73.1 | 66.4 | 64.1 | 64.8 | 60.6 | 59.3 | 61.5 | 72.5 | 78.7 |
| 23 | 81.8 | 82.5 | 82.5 | 77.0 | 71.3 | 67.7 | 64.8 | 64.4 | 63.4 | 63.7 | 73.4 | 77.3 |
| 24 | 80.9 | 82.5 | 81.2 | 76.1 | 71.2 | 65.8 | 64.8 | 63.7 | 62.8 | 63.4 | 68.6 | 71.8 |
| 25 | 75.1 | 76.1 | 76.4 | 72.5 | 66.4 | 61.5 | 59.6 | 56.6 | 55.1 | 52.4 | 57.0 | 65.8 |
| 26 | 71.2 | 73.4 | 76.1 | 71.5 | 64.4 | 59.6 | 57.6 | 56.3 | 53.8 | 53.8 | 58.9 | 64.8 |
| 27 | 70.3 | 72.8 | 75.1 | 68.6 | 61.8 | 55.4 | 54.7 | 51.5 | 49.6 | 49.2 | 54.7 | 63.4 |
| 28 | 67.4 | 66.8 | 65.8 | 62.8 | 60.9 | 59.6 | 57.9 | 56.3 | 53.4 | 55.4 | 58.9 | 61.8 |
| 29 | 65.1 | 63.7 | 63.1 | 62.5 | 60.9 | 58.9 | 57.0 | 58.6 | 58.9 | 59.9 | 63.1 | 69.0 |
| 30 | 75.4 | 75.7 | 76.7 | 71.8 | 64.4 | 58.6 | 56.3 | 54.1 | 52.4 | 51.2 | 58.9 | 67.7 |
| 31 | 74.1 | 76.1 | 74.1 | 71.2 | 65.4 | 63.1 | 59.9 | 59.9 | 60.6 | 60.9 | 62.1 | 65.8 |
| Mean of 30 days. | 71.3 | 72.1 | 71.6 | 68.3 | 64.0 | 61.5 | 59.6 | 58.3 | 57.4 | 57.8 | 62.0 | 66.4 |

Reduction to Standard Thermometer — $0^{\circ}.6$.

HYGROGRAPH.

AUGUST, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------------------|---------------------------|--------|--------|--------|--------|---------|--------|-------|-------|-------|-------|---------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 63.7 | 65.1 | 64.4 | 64.1 | 63.1 | 62.8 | 59.3 | 57.6 | 58.9 | 60.6 | 62.5 | 64.8 |
| 2 | 66.1 | 66.8 | 67.1 | 65.1 | 62.5 | 60.9 | 59.3 | 57.6 | 56.3 | 57.6 | 60.6 | 63.7 |
| 3 | 67.7 | 67.4 | 67.4 | 62.8 | 63.7 | 62.1 | 61.8 | 60.9 | 59.6 | 58.9 | 62.5 | 64.4 |
| 4 | 66.8 | 67.1 | 66.1 | 65.8 | 63.7 | 61.8 | 60.3 | 57.6 | 57.3 | 56.6 | 59.3 | 59.6 |
| 5 | 61.2 | 60.9 | 61.8 | 60.3 | 57.9 | 57.6 | 57.9 | 58.9 | 58.6 | 57.9 | 57.6 | 57.9 |
| 6 | 60.3 | 60.6 | 57.9 | 53.8 | 52.1 | 51.8 | 51.5 | 51.8 | 52.1 | 52.1 | 52.4 | 54.4 |
| 7 | 54.4 | 54.4 | 54.1 | 53.8 | 54.1 | 54.7 | 54.4 | 54.1 | 53.4 | 52.8 | 53.8 | 54.7 |
| 8 | 56.6 | 56.3 | 55.7 | 55.7 | 55.4 | 55.4 | 55.4 | 54.7 | 54.4 | 55.4 | 56.0 | 57.9 |
| 9 | 58.6 | 59.6 | 57.9 | 58.9 | 56.3 | 56.6 | 54.1 | 52.1 | 49.9 | 49.2 | 54.7 | 58.3 |
| 10 | 61.2 | 62.5 | 60.9 | 60.3 | 60.6 | 61.2 | 59.9 | 59.9 | 59.6 | 60.6 | 62.8 | 64.4 |
| 11 | 66.4 | 65.1 | 63.1 | 63.1 | 62.5 | 60.6 | 58.6 | 56.6 | 57.3 | 57.3 | 59.9 | 68.0 |
| 12 | 67.1 | 65.8 | 66.1 | 65.4 | 62.1 | 61.5 | 59.9 | 58.6 | 57.9 | 59.6 | 62.8 | 65.4 |
| 13 | 67.4 | 67.7 | 67.4 | 64.4 | 62.8 | 60.6 | 60.3 | 60.6 | 58.9 | 57.9 | 58.3 | 58.3 |
| 14 | ... | (59.6) | (58.9) | ... | ... | *(54.1) | ... | ... | ... | ... | ... | (57.7) |
| 15 | ... | (58.9) | (59.3) | (59.3) | (57.6) | *(54.6) | ... | ... | ... | ... | ... | *(54.5) |
| 16 | ... | ... | ... | (60.3) | (60.6) | *(59.0) | (56.6) | ... | ... | ... | ... | (58.9) |
| 17 | ... | ... | ... | ... | ... | *(53.8) | ... | ... | ... | ... | ... | (58.9) |
| 18 | 59.9 | 60.6 | 59.9 | 57.3 | 56.0 | 57.9 | 56.3 | 56.0 | 55.7 | 56.0 | 57.9 | 58.9 |
| 19 | 61.2 | 63.1 | 63.4 | 63.4 | 63.1 | 62.8 | 62.8 | 61.8 | 61.8 | 61.8 | 62.1 | 62.5 |
| 20 | 63.7 | 63.7 | 63.1 | 61.8 | 59.6 | 56.0 | 54.4 | 53.4 | 52.4 | 52.8 | 54.7 | 56.0 |
| 21 | 58.3 | 59.9 | 61.2 | 59.6 | 57.3 | 57.3 | 57.9 | 57.9 | 58.3 | 58.3 | 60.3 | 61.5 |
| 22 | 66.1 | 67.4 | 66.4 | 64.4 | 62.5 | 60.9 | 61.2 | 58.9 | 57.9 | 59.6 | 66.4 | 67.7 |
| 23 | 68.3 | 68.3 | 68.3 | 67.1 | 65.1 | 63.1 | 61.5 | 60.9 | 60.6 | 60.3 | 65.8 | 67.7 |
| 24 | 69.3 | 69.3 | 68.6 | 66.1 | 65.1 | 63.1 | 62.5 | 61.2 | 60.3 | 60.6 | 63.7 | 65.1 |
| 25 | 65.1 | 64.4 | 63.1 | 62.8 | 61.2 | 57.9 | 56.3 | 55.1 | 53.8 | 51.8 | 54.7 | 60.3 |
| 26 | 61.2 | 62.1 | 64.4 | 62.5 | 59.6 | 57.0 | 55.4 | 54.4 | 53.1 | 51.5 | 54.7 | 57.3 |
| 27 | 60.9 | 62.1 | 61.8 | 57.9 | 56.3 | 51.5 | 51.2 | 50.2 | 48.3 | 47.7 | 51.2 | 56.3 |
| 28 | 56.3 | 57.3 | 57.9 | 57.0 | 56.3 | 56.3 | 55.4 | 54.1 | 51.8 | 53.8 | 54.7 | 56.3 |
| 29 | 57.9 | 57.9 | 57.6 | 57.3 | 57.0 | 56.0 | 55.4 | 56.6 | 57.3 | 57.9 | 61.2 | 62.5 |
| 30 | 63.4 | 62.8 | 62.5 | 60.9 | 58.3 | 55.4 | 54.1 | 52.4 | 51.2 | 50.6 | 56.3 | 61.2 |
| 31 | 62.5 | 63.1 | 64.1 | 62.8 | 61.2 | 59.6 | 57.9 | 57.9 | 58.9 | 58.9 | 59.9 | 57.9 |
| Mean of 27 days. | 62.7 | 63.0 | 62.7 | 61.3 | 59.8 | 58.2 | 57.8 | 56.7 | 56.1 | 56.2 | 58.8 | 60.9 |

Reduction to Standard + 0°.4.

* Eye observations.

THERMOGRAPH.

SEPTEMBER, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 69.0 | 70.6 | 71.5 | 66.4 | 61.8 | 58.9 | 58.6 | 59.3 | 57.9 | 57.6 | 56.6 | 60.9 |
| 2 | 57.0 | 59.3 | 58.3 | 56.6 | 53.1 | 52.4 | 51.2 | 49.6 | 48.9 | 49.6 | 49.9 | 52.4 |
| 3 | 54.7 | 57.6 | 57.6 | 56.6 | 55.4 | 53.4 | 53.4 | 52.8 | 49.9 | 50.9 | 53.8 | 56.0 |
| 4 | 57.9 | 61.5 | 63.1 | 59.3 | 54.1 | 52.4 | 51.8 | 51.5 | 51.8 | 48.9 | 54.7 | 61.8 |
| 5 | 64.4 | 65.8 | 64.1 | 60.6 | 56.6 | 56.6 | 54.7 | 56.0 | 54.1 | 53.4 | 59.6 | 65.4 |
| 6 | 68.3 | 69.0 | 71.2 | 65.1 | 60.9 | 58.9 | 59.3 | 57.3 | 56.0 | 56.3 | 59.3 | 62.7 |
| 7 | 66.1 | 68.0 | 70.6 | 64.1 | 60.9 | 58.3 | 58.9 | 58.9 | 58.6 | 60.3 | 63.7 | 62.5 |
| 8 | 59.6 | 59.3 | 57.9 | 58.3 | 57.9 | 57.3 | 56.3 | 53.8 | 58.4 | 52.4 | 58.6 | 64.8 |
| 9 | 67.1 | 64.1 | 66.4 | 62.5 | 60.6 | 60.6 | 59.9 | 59.3 | 59.3 | 58.3 | 60.6 | 62.1 |
| 10 | 67.7 | 68.3 | 68.6 | 65.1 | 58.9 | 57.6 | 56.3 | 57.3 | 57.0 | 57.3 | 57.0 | 57.6 |
| 11 | 59.9 | 62.1 | 62.8 | 59.9 | 58.9 | 58.3 | 57.6 | 56.0 | 54.4 | 53.8 | 57.6 | 63.1 |
| 12 | 66.8 | 66.4 | 64.1 | 61.2 | 58.9 | 58.9 | 54.7 | 56.6 | 57.3 | 57.0 | 59.6 | 60.9 |
| 13 | 65.8 | 67.1 | 68.3 | 63.4 | 59.3 | 58.9 | 57.0 | 57.3 | 57.3 | 57.6 | 59.3 | 61.8 |
| 14 | 64.1 | 65.4 | 66.4 | 65.1 | 64.1 | 60.6 | 59.6 | 60.3 | 60.6 | 60.6 | 61.8 | 66.1 |
| 15 | 67.4 | 69.6 | 68.3 | 66.4 | 64.8 | 63.7 | 63.4 | 62.8 | 62.5 | 62.5 | 64.8 | 69.6 |
| 16 | 70.9 | 72.5 | 72.8 | 69.3 | 64.1 | 61.2 | 59.6 | 55.7 | 53.4 | 50.9 | 59.9 | 68.0 |
| 17 | 75.7 | 76.1 | 76.7 | 69.6 | 65.1 | 61.5 | 59.9 | 58.3 | 57.3 | 55.1 | 59.3 | 65.8 |
| 18 | 68.6 | 69.3 | 66.4 | 61.5 | 56.6 | 55.4 | 51.8 | 50.2 | 50.6 | 49.2 | 52.1 | 56.6 |
| 19 | 57.6 | 58.9 | 59.3 | 57.0 | 54.7 | 50.9 | 51.8 | 52.1 | 51.8 | 51.8 | 53.1 | 58.9 |
| 20 | 62.1 | 63.7 | 64.4 | 62.8 | 58.3 | 54.4 | 48.9 | 46.4 | 46.7 | 46.0 | 46.7 | 58.3 |
| 21 | 62.8 | 63.7 | 63.4 | 60.9 | 58.3 | 57.9 | 57.9 | 56.6 | 55.7 | 55.1 | 56.3 | 58.6 |
| 22 | 60.9 | 61.2 | 60.9 | 59.3 | 57.9 | 57.9 | 57.0 | 55.1 | 55.4 | 55.4 | 57.6 | 60.9 |
| 23 | 63.1 | 64.4 | 64.1 | 59.9 | 54.7 | 54.4 | 49.9 | 50.2 | 52.1 | 56.3 | 58.9 | 64.8 |
| 24 | 63.1 | 64.1 | 65.8 | 63.1 | 62.1 | 61.5 | 60.9 | 59.9 | 59.9 | 59.9 | 61.5 | 66.1 |
| 25 | 68.0 | 62.1 | 61.2 | 59.3 | 58.3 | 57.3 | 55.7 | 53.4 | 48.6 | 45.4 | 48.9 | 58.3 |
| 26 | 62.1 | 62.8 | 61.8 | 57.0 | 56.3 | 57.6 | 57.9 | 59.3 | 59.9 | 60.9 | 62.1 | 64.1 |
| 27 | 67.7 | 65.8 | 64.4 | 62.8 | 60.6 | 57.6 | 57.6 | 57.0 | 57.0 | 56.6 | 57.0 | 59.9 |
| 28 | 63.1 | 64.1 | 64.1 | 57.0 | 53.8 | 51.5 | 49.9 | 48.6 | 46.4 | 43.4 | 46.7 | 57.6 |
| 29 | 62.8 | 63.4 | 63.1 | 57.6 | 52.4 | 50.2 | 48.0 | 50.2 | 52.1 | 53.8 | 55.4 | 59.6 |
| 30 | 64.8 | 66.1 | 64.8 | 58.9 | 56.3 | 52.1 | 50.6 | 51.5 | 51.2 | 52.8 | 52.8 | 55.7 |
| Mean | 64.3 | 65.1 | 65.1 | 61.2 | 58.5 | 56.9 | 55.3 | 55.1 | 54.5 | 54.3 | 56.8 | 61.1 |

Reduction to Standard Thermometer — $0^{\circ}.7$.

HYGROGRAPH.

SEPTEMBER, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 59.9 | 57.9 | 59.3 | 57.9 | 57.3 | 54.7 | 56.6 | 57.3 | 53.8 | 53.1 | 53.1 | 53.1 |
| 2 | 50.9 | 51.5 | 51.2 | 51.5 | 51.2 | 49.9 | 48.3 | 47.7 | 47.7 | 48.3 | 48.6 | 49.9 |
| 3 | 52.4 | 53.4 | 54.1 | 54.1 | 53.4 | 52.1 | 52.1 | 51.8 | 49.6 | 49.9 | 51.8 | 53.1 |
| 4 | 53.1 | 55.1 | 56.0 | 54.1 | 51.5 | 50.6 | 50.2 | 49.9 | 50.2 | 47.7 | 52.4 | 56.0 |
| 5 | 58.9 | 58.6 | 57.9 | 56.3 | 54.1 | 54.7 | 53.4 | 54.7 | 53.1 | 53.1 | 57.0 | 58.9 |
| 6 | 59.3 | 59.6 | 61.2 | 58.9 | 57.3 | 56.3 | 56.3 | 56.0 | 54.7 | 55.4 | 56.0 | 58.3 |
| 7 | 59.6 | 59.3 | 60.3 | 58.9 | 57.6 | 56.3 | 56.6 | 56.0 | 57.0 | 59.3 | 60.9 | 58.6 |
| 8 | 57.3 | 57.6 | 56.6 | 57.0 | 56.3 | 56.0 | 54.7 | 52.8 | 51.5 | 51.2 | 56.3 | 60.3 |
| 9 | 61.2 | 61.5 | 62.1 | 59.3 | 58.9 | 58.9 | 57.9 | 57.6 | 57.9 | 56.3 | 57.6 | 57.6 |
| 10 | 58.6 | 57.9 | 57.9 | 58.9 | 56.3 | 56.0 | 54.4 | 54.1 | 54.4 | 54.7 | 54.4 | 55.1 |
| 11 | 57.9 | 57.9 | 57.9 | 56.3 | 55.4 | 54.7 | 54.4 | 54.1 | 52.8 | 52.1 | 55.1 | 58.9 |
| 12 | 59.6 | 60.6 | 60.6 | 58.3 | 57.0 | 57.6 | 53.8 | 55.7 | 56.0 | 56.0 | 57.3 | 57.9 |
| 13 | 60.6 | 61.2 | 61.8 | 59.9 | 57.6 | 56.3 | 55.1 | 55.1 | 56.0 | 56.0 | 57.6 | 60.3 |
| 14 | 63.7 | 63.7 | 64.1 | 62.8 | 61.8 | 58.6 | 58.6 | 58.9 | 58.9 | 59.3 | 59.9 | 62.8 |
| 15 | 62.8 | 64.1 | 64.1 | 62.5 | 62.1 | 62.1 | 61.5 | 60.9 | 60.6 | 60.6 | 61.5 | 63.4 |
| 16 | 64.4 | 65.4 | 65.4 | 64.1 | 61.2 | 59.6 | 57.6 | 54.4 | 52.1 | 49.9 | 57.6 | 64.1 |
| 17 | 66.1 | 65.8 | 66.8 | 64.4 | 62.1 | 59.3 | 57.9 | 56.3 | 55.7 | 54.1 | 57.3 | 60.6 |
| 18 | 60.6 | 59.3 | 57.9 | 56.3 | 54.1 | 52.8 | 50.9 | 49.2 | 48.9 | 48.0 | 49.6 | 52.8 |
| 19 | 54.7 | 54.7 | 53.4 | 51.8 | 50.2 | 48.3 | 48.9 | 49.6 | 49.2 | 49.2 | 50.2 | 54.1 |
| 20 | 55.4 | 57.3 | 57.3 | 56.3 | 54.7 | 50.6 | 48.3 | 45.0 | 46.3 | 45.7 | 46.3 | 51.5 |
| 21 | 54.7 | 57.0 | 57.6 | 56.3 | 55.1 | 56.0 | 55.7 | 55.1 | 53.8 | 52.8 | 52.1 | 53.4 |
| 22 | 54.7 | 55.4 | 55.7 | 55.1 | 54.7 | 54.7 | 53.4 | 53.4 | 52.8 | 52.8 | 54.1 | 55.4 |
| 23 | 56.0 | 57.6 | 57.3 | 54.7 | 51.8 | 51.5 | 48.9 | 49.2 | 51.2 | 54.4 | 57.3 | 61.2 |
| 24 | 62.5 | 62.5 | 61.8 | 60.6 | 59.6 | 59.3 | 58.9 | 58.6 | 58.9 | 58.6 | 60.3 | 60.6 |
| 25 | 59.9 | 58.6 | 57.9 | 56.6 | 56.0 | 54.4 | 53.1 | 51.5 | 51.2 | 44.7 | 47.7 | 53.8 |
| 26 | 54.4 | 54.1 | 54.4 | 53.1 | 53.1 | 54.7 | 56.0 | 57.0 | 58.6 | 59.3 | 59.6 | 60.3 |
| 27 | 61.2 | 61.2 | 60.3 | 58.6 | 57.6 | 56.6 | 56.3 | 56.0 | 55.4 | 55.4 | 56.0 | 57.9 |
| 28 | 57.9 | 57.9 | 57.3 | 54.4 | 51.5 | 49.9 | 48.3 | 48.0 | 44.7 | 43.1 | 43.4 | 54.7 |
| 29 | 56.3 | 56.6 | 56.3 | 54.4 | 50.6 | 47.4 | 47.4 | 48.9 | 52.1 | 51.8 | 55.4 | 57.6 |
| 30 | 59.3 | 59.3 | 57.9 | 56.6 | 53.1 | 51.2 | 49.6 | 50.6 | 50.2 | 51.8 | 52.1 | 54.7 |
| Mean | 58.5 | 58.8 | 58.7 | 57.3 | 55.8 | 54.7 | 53.8 | 53.5 | 53.2 | 52.8 | 54.6 | 57.2 |

Reduction to Standard 0.0.

THERMOGRAPH.

OCTOBER, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 61.2 | 65.8 | 66.8 | 61.2 | 58.3 | 56.0 | 54.7 | 53.4 | 52.1 | 51.5 | 53.4 | 58.3 |
| 2 | 62.8 | 64.8 | 63.4 | 59.9 | 57.6 | 55.7 | 57.6 | 57.0 | 57.6 | 58.3 | 58.6 | 59.9 |
| 3 | 63.1 | 63.1 | 61.8 | 59.9 | 58.3 | 57.6 | 57.3 | 55.7 | 53.1 | 52.1 | 50.9 | 49.9 |
| 4 | 48.9 | 48.9 | 49.9 | 49.6 | 47.7 | 43.1 | 43.1 | 42.4 | 41.2 | 39.4 | 38.3 | 51.2 |
| 5 | 55.4 | 56.3 | 51.2 | 47.4 | 44.1 | 41.2 | 45.0 | 47.0 | 45.4 | 43.1 | 45.7 | 51.8 |
| 6 | 53.8 | 56.0 | 54.7 | 46.4 | 46.0 | 44.4 | 43.7 | 46.0 | 47.4 | 49.9 | 54.1 | 57.6 |
| 7 | 56.3 | 57.0 | 55.7 | 55.7 | 55.4 | 53.8 | 53.4 | 51.8 | 52.8 | 52.1 | 51.2 | 49.6 |
| 8 | 50.2 | 53.4 | 52.4 | 52.4 | 51.5 | 48.9 | 48.0 | 46.0 | 46.4 | 45.4 | 48.6 | 49.9 |
| 9 | 50.2 | 53.4 | 51.8 | 51.8 | 51.5 | 51.2 | 48.9 | 48.6 | 45.7 | 45.4 | 50.9 | 55.1 |
| 10 | 57.6 | 58.9 | 57.3 | 54.7 | 50.9 | 49.6 | 49.2 | 50.2 | 51.2 | 52.1 | 53.4 | 57.9 |
| 11 | 62.1 | 61.8 | 61.8 | 59.9 | 59.3 | 58.9 | 58.9 | 58.3 | 56.6 | 56.3 | 57.9 | 59.6 |
| 12 | 62.5 | 63.1 | 63.1 | 60.3 | 60.3 | 59.3 | 58.3 | 57.9 | 57.6 | 57.6 | 57.6 | 60.3 |
| 13 | 63.7 | 63.7 | 62.1 | 60.3 | 59.3 | 58.6 | 53.8 | 49.9 | 47.7 | 46.7 | 46.7 | 55.7 |
| 14 | 60.6 | 61.5 | 59.9 | 53.4 | 50.2 | 48.6 | 46.0 | 45.0 | 45.4 | 47.0 | 48.3 | 50.2 |
| 15 | 53.8 | 56.6 | 56.3 | 55.1 | 54.1 | 54.1 | 53.1 | 53.1 | 52.8 | 52.1 | 53.1 | 55.4 |
| 16 | 58.3 | 59.6 | 58.9 | 57.3 | 55.4 | 52.4 | 51.2 | 51.5 | 52.8 | 53.1 | 52.4 | 55.7 |
| 17 | 59.3 | 60.3 | 58.9 | 55.7 | 55.1 | 54.4 | 54.1 | 53.8 | 53.8 | 54.1 | 54.4 | 55.7 |
| 18 | 57.0 | 56.3 | 55.4 | 54.1 | 52.1 | 51.8 | 52.8 | 53.4 | 53.4 | 53.8 | 53.8 | 56.3 |
| 19 | 59.3 | 59.9 | 59.3 | 54.7 | 53.1 | 49.6 | 48.6 | 46.4 | 45.4 | 43.7 | 46.0 | 50.9 |
| 20 | 58.3 | 58.9 | 58.3 | 54.7 | 53.1 | 52.4 | 50.6 | 51.5 | 51.5 | 51.5 | 51.8 | 53.4 |
| 21 | 55.1 | 55.4 | 53.4 | 50.2 | 49.6 | 48.6 | 47.0 | 45.0 | 44.4 | 44.1 | 44.1 | 44.7 |
| 22 | 43.4 | 44.1 | 45.4 | 45.4 | 45.4 | 45.4 | 47.0 | 46.0 | 46.4 | 45.7 | 46.0 | 47.0 |
| 23 | 50.2 | 51.5 | 50.2 | 49.6 | 45.7 | 47.7 | 47.7 | 48.9 | 49.6 | 50.2 | 52.1 | 54.4 |
| 24 | 58.9 | 59.9 | 57.3 | 55.1 | 55.4 | 56.3 | 55.4 | 53.4 | 53.4 | 53.4 | 54.7 | 56.6 |
| 25 | 58.9 | 58.3 | 57.0 | 55.7 | 50.6 | 47.7 | 45.7 | 47.0 | 48.0 | 48.0 | 49.2 | 51.5 |
| 26 | 54.4 | 55.7 | 55.1 | 51.5 | 49.9 | 50.2 | 51.2 | 50.9 | 52.1 | 52.1 | 53.4 | 55.7 |
| 27 | 59.3 | 57.9 | 56.3 | 55.1 | 54.1 | 51.2 | 51.8 | 48.9 | 47.0 | 47.4 | 47.7 | 54.7 |
| 28 | 58.6 | 58.3 | 55.4 | 50.9 | 48.9 | 46.7 | 45.4 | 45.7 | 46.4 | 44.4 | 45.7 | 51.8 |
| 29 | 56.3 | 55.1 | 53.8 | 50.2 | 48.0 | 46.0 | 47.7 | 49.9 | 49.9 | 50.6 | 50.9 | 53.1 |
| 30 | 52.4 | 53.1 | 51.2 | 47.0 | 44.4 | 42.7 | 41.5 | 39.9 | 36.0 | 34.7 | 38.9 | 47.0 |
| 31 | 54.7 | 54.1 | 53.1 | 52.4 | 51.5 | 50.6 | 50.2 | 51.2 | 49.9 | 49.2 | 50.9 | 54.7 |
| Mean | 56.4 | 57.1 | 56.3 | 53.8 | 52.1 | 50.4 | 50.3 | 49.8 | 49.4 | 49.1 | 50.3 | 53.7 |

Reduction to Standard Thermometer °°.

HYGROGRAPH.

OCTOBER, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 60.6 | 59.9 | 61.2 | 57.3 | 56.0 | 54.4 | 53.4 | 52.1 | 50.9 | 50.6 | 52.4 | 55.4 |
| 2 | 57.0 | 55.7 | 57.3 | 55.4 | 54.7 | 53.1 | 54.7 | 55.1 | 55.4 | 55.4 | 55.4 | 56.3 |
| 3 | 57.9 | 57.9 | 58.3 | 57.0 | 56.3 | 55.7 | 55.1 | 55.1 | 52.1 | 51.2 | 50.2 | 48.6 |
| 4 | 47.7 | 47.7 | 47.4 | 47.7 | 47.0 | 42.7 | 42.4 | 41.8 | 41.2 | 39.2 | 38.3 | 48.3 |
| 5 | 48.9 | 48.6 | 47.0 | 45.0 | 43.1 | 40.8 | 44.0 | 45.4 | 44.7 | 42.1 | 43.1 | 47.4 |
| 6 | 47.7 | 48.3 | 48.3 | 45.0 | 44.0 | 43.1 | 42.4 | 43.7 | 46.0 | 48.3 | 51.5 | 53.8 |
| 7 | 53.1 | 54.1 | 53.8 | 53.8 | 52.4 | 51.2 | 50.6 | 49.2 | 50.2 | 49.9 | 48.3 | 48.3 |
| 8 | 49.9 | 52.4 | 50.2 | 49.2 | 48.3 | 46.7 | 46.0 | 44.7 | 45.4 | 44.4 | 47.4 | 48.9 |
| 9 | 48.3 | 48.9 | 48.3 | 48.3 | 48.3 | 48.0 | 46.7 | 46.0 | 44.4 | 44.0 | 48.0 | 50.9 |
| 10 | 51.2 | 52.8 | 52.8 | 51.5 | 49.2 | 48.3 | 48.3 | 49.6 | 50.6 | 51.5 | 52.8 | 56.3 |
| 11 | 57.9 | 58.6 | 58.9 | 57.9 | 57.6 | 57.0 | 57.6 | 57.0 | 55.4 | 55.4 | 57.0 | 58.6 |
| 12 | 59.9 | 60.3 | 59.6 | 57.9 | 57.9 | 57.6 | 56.6 | 56.3 | 56.3 | 56.3 | 56.3 | 57.6 |
| 13 | 58.9 | 59.3 | 58.9 | 57.9 | 57.3 | 56.6 | 52.4 | 49.2 | 47.0 | 46.0 | 46.3 | 53.1 |
| 14 | 54.4 | 54.7 | 55.1 | 51.5 | 49.2 | 48.0 | 46.3 | 44.4 | 44.7 | 46.7 | 47.7 | 49.2 |
| 15 | 51.5 | 53.4 | 53.8 | 53.4 | 52.8 | 52.8 | 52.1 | 51.5 | 51.2 | 50.9 | 51.8 | 53.1 |
| 16 | 55.7 | 57.0 | 56.6 | 55.7 | 54.4 | 51.5 | 50.2 | 50.9 | 52.1 | 52.1 | 51.5 | 53.4 |
| 17 | 57.0 | 56.0 | 54.4 | 52.8 | 52.4 | 52.1 | 52.1 | 52.4 | 52.7 | 53.1 | 53.4 | 53.8 |
| 18 | 54.7 | 54.4 | 53.4 | 52.8 | 50.9 | 50.9 | 51.5 | 52.1 | 52.1 | 52.4 | 52.8 | 53.8 |
| 19 | 55.7 | 55.7 | 55.7 | 53.1 | 51.5 | 48.9 | 48.0 | 46.0 | 44.7 | 43.4 | 45.7 | 50.2 |
| 20 | 56.0 | 55.4 | 55.4 | 52.8 | 51.2 | 50.9 | 49.2 | 49.9 | 50.6 | 50.6 | 50.9 | 51.5 |
| 21 | 52.4 | 53.1 | 48.9 | 48.6 | 46.7 | 45.0 | 44.4 | 42.7 | 41.8 | 41.2 | 41.2 | 41.5 |
| 22 | 41.8 | 42.7 | 43.7 | 45.0 | 45.0 | 45.0 | 45.0 | 44.7 | 45.0 | 44.4 | 45.0 | 46.3 |
| 23 | 48.3 | 48.6 | 48.3 | 48.0 | 45.0 | 46.0 | 46.3 | 47.0 | 47.4 | 48.3 | 50.2 | 51.5 |
| 24 | 53.1 | 54.4 | 52.8 | 52.1 | 52.8 | 53.4 | 53.1 | 51.5 | 51.5 | 51.5 | 52.1 | 53.8 |
| 25 | 54.7 | 54.4 | 54.4 | 53.8 | 49.6 | 47.7 | 45.0 | 46.0 | 47.7 | 47.4 | 48.6 | 50.6 |
| 26 | 52.1 | 53.1 | 52.1 | 50.6 | 48.9 | 49.2 | 49.6 | 49.9 | 50.6 | 50.9 | 51.8 | 53.8 |
| 27 | 54.1 | 54.4 | 53.8 | 53.1 | 52.4 | 49.6 | 50.6 | 48.3 | 46.7 | 47.0 | 47.0 | 52.8 |
| 28 | 53.8 | 53.1 | 51.8 | 49.2 | 47.7 | 46.0 | 45.0 | 45.0 | 45.4 | 44.0 | 44.4 | 49.2 |
| 29 | 51.5 | 51.5 | 50.6 | 48.3 | 46.0 | 44.4 | 45.4 | 47.7 | 48.0 | 48.3 | 48.9 | 49.6 |
| 30 | 45.0 | 46.3 | 46.3 | 44.4 | 42.7 | 41.5 | 40.5 | 39.5 | 36.3 | 34.6 | 38.0 | 43.4 |
| 31 | 48.6 | 48.6 | 49.6 | 49.2 | 48.6 | 48.9 | 49.6 | 50.2 | 49.2 | 48.6 | 50.2 | 52.1 |
| Mean | 52.9 | 53.3 | 52.9 | 51.6 | 50.3 | 49.3 | 48.8 | 48.5 | 48.3 | 48.1 | 49.0 | 51.4 |

Reduction to Standard + 0°.4.

THERMOGRAPH.

NOVEMBER, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 56.6 | 56.6 | 54.4 | 51.5 | 50.2 | 48.9 | 48.3 | 49.2 | 49.9 | 51.8 | 53.4 | 55.4 |
| 2 | 57.6 | 58.6 | 57.9 | 57.0 | 56.6 | 57.0 | 57.0 | 57.3 | 57.6 | 57.6 | 58.3 | 60.9 |
| 3 | 60.9 | 60.3 | 54.4 | 51.8 | 49.6 | 48.9 | 48.6 | 48.9 | 49.6 | 49.6 | 49.9 | 51.2 |
| 4 | 53.4 | 54.4 | 53.4 | 52.1 | 51.2 | 50.9 | 50.9 | 51.2 | 50.9 | 51.2 | 52.1 | 54.1 |
| 5 | 57.6 | 59.3 | 59.3 | 57.9 | 57.6 | 55.1 | 55.4 | 54.7 | 54.7 | 54.4 | 54.1 | 55.4 |
| 6 | 57.3 | 57.9 | 56.6 | 53.8 | 49.6 | 47.7 | 48.3 | 46.0 | 44.1 | 42.7 | 43.7 | 47.4 |
| 7 | 50.6 | 52.4 | 47.4 | 43.1 | 42.7 | 42.1 | 40.8 | 41.2 | 41.8 | 43.4 | 44.7 | 47.4 |
| 8 | 48.6 | 49.6 | 47.4 | 43.1 | 40.2 | 41.8 | 42.1 | 43.4 | 44.7 | 45.4 | 46.0 | 47.7 |
| 9 | 49.2 | 49.9 | 50.6 | 49.6 | 48.9 | 48.6 | 48.3 | 47.0 | 47.4 | 47.4 | 48.3 | 50.2 |
| 10 | 50.6 | 51.2 | 50.2 | 48.9 | 48.0 | 48.0 | 47.7 | 46.7 | 46.7 | 45.4 | 42.1 | 45.7 |
| 11 | 51.2 | 50.9 | 47.4 | 43.4 | 41.2 | 37.0 | 33.7 | 34.0 | 33.7 | 34.3 | 34.0 | 35.0 |
| 12 | 38.9 | 41.2 | 41.5 | 40.8 | 39.2 | 37.3 | 35.7 | 33.0 | 31.2 | 30.5 | 31.8 | 35.7 |
| 13 | 40.5 | 42.7 | 42.7 | 42.1 | 41.8 | 39.5 | 37.6 | 38.3 | 39.9 | 42.4 | 42.4 | 45.0 |
| 14 | 48.3 | 50.2 | 50.2 | 48.9 | 48.9 | 48.6 | 48.6 | 48.9 | 48.9 | 45.4 | 42.1 | 44.4 |
| 15 | 47.0 | 48.6 | 45.4 | 42.1 | 42.4 | 43.7 | 43.7 | 43.7 | 43.1 | 44.1 | 44.7 | 46.7 |
| 16 | 48.6 | 49.6 | 49.2 | 48.6 | 47.4 | 46.4 | 44.1 | 41.5 | 38.9 | 40.8 | 42.1 | 45.7 |
| 17 | 50.2 | 48.9 | 48.0 | 47.0 | 47.0 | 47.4 | 47.7 | 46.7 | 46.4 | 42.7 | 41.2 | 45.4 |
| 18 | 54.1 | 54.4 | 49.6 | 45.0 | 43.4 | 41.8 | 40.5 | 41.5 | 41.2 | 41.5 | 41.5 | 41.8 |
| 19 | 41.8 | 42.1 | 42.4 | 42.4 | 42.1 | 42.1 | 42.7 | 43.1 | 43.4 | 44.4 | 44.4 | 45.7 |
| 20 | 48.0 | 50.2 | 48.3 | 47.7 | 45.7 | 44.7 | 43.7 | 42.4 | 42.7 | 43.7 | 45.7 | 48.6 |
| 21 | 50.6 | 52.1 | 51.5 | 49.6 | 49.9 | 49.2 | 48.6 | 48.0 | 45.0 | 43.1 | 42.7 | 47.0 |
| 22 | 50.9 | 52.8 | 49.9 | 46.4 | 47.0 | 47.0 | 46.0 | 46.7 | 50.2 | 52.1 | 51.8 | 49.9 |
| 23 | 50.2 | 49.2 | 48.6 | 46.4 | 45.7 | 45.7 | 45.0 | 44.7 | 44.1 | 43.4 | 42.7 | 42.1 |
| 24 | 46.7 | 47.0 | 42.7 | 38.6 | 37.3 | 35.3 | 32.7 | 35.0 | 37.3 | 38.0 | 38.0 | 38.9 |
| 25 | 39.9 | 39.9 | 39.5 | 39.2 | 38.9 | 36.0 | 36.0 | 35.7 | 35.3 | 34.7 | 34.0 | 35.3 |
| 26 | 38.0 | 38.0 | 39.9 | 41.2 | 43.4 | 42.4 | 41.5 | 41.8 | 41.2 | 40.5 | 40.8 | 42.7 |
| 27 | 45.0 | 44.7 | 41.5 | 38.0 | 36.0 | 33.4 | 34.7 | 36.0 | 35.7 | 35.7 | 37.3 | 38.3 |
| 28 | 44.4 | 43.7 | 40.2 | 37.6 | 34.7 | 32.4 | 31.5 | 32.7 | 32.7 | 34.0 | 35.3 | 40.2 |
| 29 | 41.2 | 43.7 | 43.7 | 42.4 | 39.5 | 40.5 | 37.0 | 36.6 | 42.1 | 43.1 | 44.1 | 43.7 |
| 30 | 43.4 | 42.1 | 40.5 | 39.9 | 40.5 | 41.5 | 41.2 | 38.9 | 38.9 | 40.8 | 43.1 | 45.4 |
| Mean | 48.7 | 49.4 | 47.5 | 45.9 | 44.9 | 44.1 | 43.3 | 43.2 | 43.3 | 43.5 | 43.7 | 45.8 |

Reduction to Standard Thermometer + 0°.2.

HYGROGRAPH.

NOVEMBER, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 51.8 | 51.5 | 50.2 | 48.6 | 48.0 | 47.7 | 47.0 | 48.3 | 48.6 | 50.9 | 52.4 | 54.4 |
| 2 | 56.0 | 56.3 | 55.7 | 55.1 | 55.4 | 55.7 | 55.7 | 56.0 | 56.0 | 56.0 | 56.6 | 57.9 |
| 3 | 58.6 | 58.6 | 55.3 | 50.6 | 48.3 | 48.0 | 47.7 | 48.0 | 48.3 | 48.6 | 48.9 | 50.2 |
| 4 | 52.8 | 53.1 | 52.8 | 51.2 | 50.2 | 49.9 | 50.2 | 50.2 | 50.2 | 50.9 | 51.5 | 53.4 |
| 5 | 56.3 | 57.0 | 57.3 | 56.3 | 56.0 | 54.1 | 54.4 | 53.8 | 53.8 | 53.4 | 53.4 | 54.4 |
| 6 | 55.7 | 56.0 | 54.4 | 51.5 | 48.9 | 47.0 | 47.4 | 45.7 | 43.7 | 42.1 | 42.7 | 45.7 |
| 7 | 48.3 | 49.6 | 47.7 | 43.1 | 43.1 | 41.8 | 40.8 | 41.2 | 41.5 | 42.7 | 44.0 | 46.0 |
| 8 | 46.7 | 46.7 | 45.7 | 41.8 | 40.2 | 41.5 | 41.8 | 43.4 | 44.7 | 45.0 | 46.0 | 47.4 |
| 9 | 48.6 | 49.6 | 49.2 | 48.9 | 48.0 | 47.7 | 47.4 | 46.3 | 46.7 | 46.7 | 47.4 | 48.3 |
| 10 | 49.2 | 49.2 | 48.0 | 47.0 | 46.7 | 46.7 | 45.0 | 43.7 | 43.7 | 42.4 | 41.2 | 44.0 |
| 11 | 46.7 | 47.0 | 45.4 | 42.4 | 41.2 | 37.3 | 33.7 | 33.7 | 33.7 | 34.3 | 34.0 | 34.0 |
| 12 | 38.6 | 41.2 | 41.5 | 40.5 | 38.9 | 37.3 | 35.3 | 33.1 | 30.8 | 30.8 | 31.5 | 35.7 |
| 13 | 39.8 | 41.8 | 42.1 | 41.5 | 41.2 | 39.2 | 37.6 | 38.0 | 39.2 | 41.5 | 42.1 | 45.0 |
| 14 | 47.0 | 48.6 | 48.6 | 47.4 | 47.7 | 48.0 | 47.7 | 47.7 | 48.0 | 43.7 | 40.8 | 42.1 |
| 15 | 42.7 | 44.4 | 43.4 | 40.8 | 41.2 | 42.1 | 42.1 | 42.4 | 41.8 | 42.4 | 43.1 | 44.4 |
| 16 | 46.3 | 47.0 | 46.3 | 45.7 | 45.7 | 45.0 | 43.4 | 40.2 | 38.6 | 40.2 | 41.2 | 44.4 |
| 17 | 46.7 | 45.0 | 44.7 | 44.7 | 45.0 | 45.7 | 46.3 | 45.7 | 45.0 | 42.1 | 40.5 | 43.4 |
| 18 | 48.0 | 48.0 | 45.4 | 43.1 | 42.1 | 40.8 | 40.2 | 40.5 | 40.2 | 40.2 | 40.5 | 40.5 |
| 19 | 40.8 | 41.2 | 41.5 | 41.5 | 41.5 | 41.5 | 42.1 | 42.4 | 43.1 | 43.7 | 44.7 | 45.4 |
| 20 | 47.0 | 48.6 | 47.4 | 47.0 | 45.0 | 44.4 | 43.4 | 42.1 | 42.1 | 43.4 | 45.0 | 47.7 |
| 21 | 49.2 | 50.9 | 49.9 | 48.6 | 48.6 | 47.7 | 47.0 | 46.3 | 44.0 | 42.1 | 41.8 | 46.0 |
| 22 | 48.6 | 49.2 | 47.0 | 45.0 | 46.0 | 45.7 | 44.7 | 45.4 | 48.9 | 50.9 | 49.9 | 48.0 |
| 23 | 47.0 | 45.7 | 45.0 | 44.4 | 44.0 | 43.7 | 43.4 | 43.4 | 43.4 | 43.4 | 43.1 | 43.1 |
| 24 | 41.8 | 42.4 | 40.2 | 37.3 | 36.3 | 35.0 | 32.8 | 34.6 | 36.6 | 37.3 | 37.6 | 38.3 |
| 25 | 39.2 | 39.2 | 39.2 | 38.3 | 38.3 | 35.3 | 34.0 | 33.4 | 33.7 | 33.7 | 33.1 | 33.7 |
| 26 | 36.0 | 37.0 | 38.6 | 39.5 | 40.8 | 40.5 | 39.5 | 39.5 | 38.9 | 39.8 | 39.8 | 41.2 |
| 27 | 41.5 | 40.8 | 39.2 | 36.6 | 34.6 | 32.8 | 33.7 | 35.0 | 35.3 | 35.0 | 37.0 | 36.3 |
| 28 | 41.5 | 41.8 | 39.2 | 36.6 | 35.0 | 32.2 | 32.2 | 31.2 | 31.2 | 32.5 | 33.7 | 37.0 |
| 29 | 40.5 | 41.8 | 41.8 | 41.5 | 38.6 | 39.8 | 36.3 | 36.3 | 40.2 | 41.2 | 41.2 | 41.2 |
| 30 | 40.5 | 39.5 | 38.6 | 38.0 | 38.6 | 39.5 | 40.2 | 38.6 | 38.6 | 40.2 | 42.4 | 44.4 |
| Mean | 46.4 | 47.0 | 46.0 | 44.7 | 43.8 | 43.1 | 42.6 | 42.2 | 42.3 | 42.6 | 42.9 | 44.5 |

Reduction to Standard $+ 0^{\circ}.5$.

THERMOGRAPH.

DECEMBER, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|------|---------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
| 1 | 47.7 | 49.2 | 49.6 | 49.6 | 49.6 | 48.6 | 44.4 | 44.7 | 46.0 | 48.6 | 49.9 | 52.4 |
| 2 | 55.4 | 55.7 | 52.8 | 50.6 | 50.6 | 49.9 | 50.2 | 50.9 | 50.9 | 50.6 | 50.6 | 52.1 |
| 3 | 54.1 | 55.4 | 54.4 | 54.1 | 54.1 | 52.8 | 51.5 | 51.2 | 49.6 | 47.4 | 45.7 | 47.7 |
| 4 | 49.9 | 49.9 | 46.7 | 42.7 | 41.2 | 40.2 | 38.9 | 38.9 | 38.3 | 39.2 | 40.2 | 42.1 |
| 5 | 47.0 | 49.6 | 44.4 | 42.1 | 41.5 | 41.8 | 41.8 | 43.7 | 44.4 | 47.7 | 47.0 | 50.9 |
| 6 | 53.8 | 53.8 | 51.5 | 51.8 | 51.2 | 51.2 | 50.2 | 50.2 | 51.5 | 52.8 | 52.8 | 53.4 |
| 7 | 53.4 | 55.1 | 54.1 | 54.4 | 52.8 | 48.6 | 45.4 | 41.8 | 37.3 | 35.7 | 36.3 | 36.0 |
| 8 | 38.9 | 44.1 | 42.1 | 40.2 | 42.4 | 45.0 | 44.7 | 45.0 | 45.7 | 45.4 | 45.0 | 45.0 |
| 9 | 45.4 | 45.7 | 45.0 | 45.0 | 45.0 | 45.4 | 45.4 | 45.0 | 45.0 | 45.4 | 46.4 | 47.0 |
| 10 | 52.4 | 52.1 | 48.3 | 45.4 | 44.7 | 45.0 | 44.4 | 44.7 | 44.7 | 43.1 | 38.3 | 42.7 |
| 11 | 46.7 | 46.7 | 41.8 | 36.3 | 37.0 | 38.6 | 41.8 | 40.8 | 39.2 | 38.3 | 38.9 | 40.2 |
| 12 | 42.7 | 44.1 | 45.0 | 45.0 | 44.7 | 44.4 | 44.1 | 44.4 | 44.4 | 43.4 | 42.4 | 43.7 |
| 13 | 44.4 | 45.0 | 43.7 | 43.1 | 43.1 | 43.1 | 43.1 | 43.7 | 42.4 | 43.1 | 42.1 | 43.1 |
| 14 | 44.1 | 44.4 | 43.7 | 44.4 | 43.7 | 43.7 | 44.4 | 44.7 | 46.0 | 47.0 | 47.7 | 48.9 |
| 15 | 50.2 | 50.9 | 49.2 | 48.9 | 48.6 | 48.6 | 48.9 | 49.6 | 49.2 | 49.2 | 48.6 | 51.8 |
| 16 | 53.1 | 54.1 | 48.6 | 46.7 | 46.4 | 47.7 | 47.7 | 46.7 | 46.7 | 47.7 | 49.9 | 52.1 |
| 17 | 52.4 | 53.8 | 53.1 | 52.1 | 50.2 | 50.9 | 52.8 | 52.4 | 51.8 | 52.4 | 51.2 | 49.9 |
| 18 | 49.6 | 49.9 | 47.7 | 48.6 | 47.7 | 47.0 | 45.4 | 42.7 | 40.2 | 38.0 | 37.0 | 38.9 |
| 19 | 42.4 | 44.1 | 40.8 | 37.0 | 34.7 | 35.7 | 33.4 | 34.0 | 32.4 | 34.7 | 35.3 | 39.9 |
| 20 | 46.0 | 46.0 | 45.4 | 40.8 | 42.4 | 41.5 | 41.2 | 41.8 | 44.1 | 47.0 | 49.6 | 51.5 |
| 21 | 51.8 | 51.5 | 52.1 | 51.8 | 52.1 | 52.1 | 51.5 | 50.9 | 49.9 | 48.9 | 49.2 | 50.6 |
| 22 | 52.8 | 53.1 | 53.8 | 53.4 | 52.1 | 52.4 | 52.8 | 52.4 | 52.8 | 52.1 | 51.8 | 51.8 |
| 23 | 53.1 | 53.4 | 52.1 | 51.5 | 50.9 | 48.9 | 49.9 | 49.9 | 49.2 | 48.9 | 47.4 | 48.9 |
| 24 | 51.2 | 51.2 | 49.9 | 49.2 | 49.2 | 48.9 | 48.3 | 47.4 | 47.4 | 48.6 | 49.2 | 51.5 |
| 25 | 51.8 | 49.6 | 44.7 | 47.0 | 43.7 | 39.9 | 39.5 | 40.2 | 42.1 | 42.7 | 43.1 | 45.0 |
| 26 | 46.7 | 46.4 | 45.0 | 43.7 | 43.4 | 43.1 | 42.4 | 42.1 | 42.1 | 41.8 | 41.8 | 43.1 |
| 27 | 44.4 | 44.7 | 42.4 | 41.2 | 38.9 | 35.3 | 33.0 | 33.7 | 32.7 | 34.7 | 36.0 | 39.5 |
| 28 | 44.1 | 45.7 | 44.7 | 44.7 | 43.7 | 42.7 | 43.7 | 43.1 | 42.4 | 41.5 | 40.2 | 40.5 |
| 29 | 42.4 | 42.4 | 42.4 | 43.1 | 41.2 | 39.9 | 37.6 | 35.7 | 35.0 | 36.3 | 36.6 | 36.3 |
| 30 | 41.5 | 43.1 | 42.1 | 41.2 | 41.2 | 40.2 | 38.3 | 38.0 | 37.6 | 34.7 | 33.4 | 32.4 |
| 31 | 34.3 | 35.7 | 37.0 | 37.6 | 38.6 | 38.3 | 38.3 | 38.6 | 38.0 | 35.3 | 33.0 | 34.0 |
| Mean | 47.9 | 48.5 | 46.9 | 45.8 | 45.3 | 44.9 | 44.3 | 44.1 | 43.8 | 43.6 | 43.7 | 45.2 |

Reduction to Standard Thermometer 0° o.

HYGROGRAPH.

DECEMBER, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. |
|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1 | 46.7 | 48.3 | 48.6 | 48.6 | 48.9 | 47.7 | 43.7 | 43.7 | 45.0 | 48.0 | 48.9 | 51.2 |
| 2 | 53.4 | 53.4 | 51.2 | 48.6 | 48.0 | 48.0 | 48.3 | 48.6 | 48.6 | 48.3 | 48.3 | 49.9 |
| 3 | 51.5 | 52.4 | 52.4 | 52.4 | 51.8 | 50.2 | 49.2 | 48.6 | 47.0 | 45.0 | 43.7 | 45.0 |
| 4 | 46.0 | 46.0 | 44.0 | 41.5 | 39.8 | 38.9 | 38.3 | 38.3 | 37.6 | 38.6 | 39.2 | 41.2 |
| 5 | 45.0 | 46.7 | 43.1 | 41.2 | 40.2 | 40.8 | 40.8 | 42.4 | 43.1 | 46.0 | 46.0 | 48.9 |
| 6 | 51.5 | 51.2 | 49.6 | 50.2 | 49.9 | 50.2 | 48.3 | 49.6 | 50.9 | 51.5 | 51.5 | 51.8 |
| 7 | 51.8 | 52.1 | 51.5 | 51.8 | 50.9 | 46.7 | 44.7 | 41.5 | 36.6 | 35.3 | 36.3 | 36.0 |
| 8 | 38.6 | 43.7 | 41.8 | 40.2 | 41.8 | 44.7 | 44.4 | 44.7 | 44.0 | 43.4 | 43.4 | 43.1 |
| 9 | 43.4 | 43.7 | 43.1 | 43.1 | 43.4 | 43.4 | 43.4 | 43.4 | 43.4 | 44.0 | 45.0 | 45.0 |
| 10 | 50.6 | 49.6 | 47.0 | 44.7 | 44.4 | 44.7 | 44.4 | 44.4 | 44.0 | 42.4 | 38.3 | 42.4 |
| 11 | 44.0 | 44.0 | 40.8 | 36.0 | 36.6 | 38.3 | 40.8 | 39.8 | 38.9 | 38.0 | 38.3 | 39.2 |
| 12 | 40.5 | 42.1 | 43.1 | 43.4 | 43.1 | 42.7 | 42.4 | 42.7 | 42.7 | 42.1 | 41.2 | 42.1 |
| 13 | 42.4 | 43.4 | 42.4 | 41.8 | 41.2 | 40.8 | 40.8 | 41.2 | 40.5 | 40.2 | 39.8 | 40.5 |
| 14 | 41.5 | 41.8 | 41.5 | 41.8 | 41.2 | 41.8 | 42.7 | 42.7 | 44.4 | 45.4 | 46.0 | 47.0 |
| 15 | 48.3 | 48.6 | 47.7 | 47.0 | 47.0 | 47.7 | 47.7 | 47.7 | 47.7 | 47.4 | 47.0 | 49.6 |
| 16 | 50.9 | 50.9 | 47.0 | 45.0 | 44.7 | 46.7 | 46.0 | 45.0 | 45.0 | 46.3 | 48.9 | 49.9 |
| 17 | 51.2 | 50.6 | 49.9 | 49.2 | 47.7 | 48.9 | 50.9 | 50.6 | 50.6 | 50.6 | 48.9 | 48.3 |
| 18 | 47.0 | 46.7 | 46.0 | 47.4 | 46.7 | 45.7 | 44.4 | 41.8 | 39.5 | 37.6 | 36.6 | 38.3 |
| 19 | 41.2 | 41.8 | 39.5 | 36.6 | 34.6 | 35.3 | 32.8 | 33.4 | 32.2 | 34.0 | 34.6 | 38.6 |
| 20 | 43.4 | 43.7 | 43.1 | 38.9 | 40.2 | 39.2 | 38.9 | 40.2 | 42.7 | 46.0 | 47.7 | 49.6 |
| 21 | 49.6 | 49.2 | 49.2 | 49.9 | 50.2 | 49.9 | 48.6 | 48.0 | 47.4 | 46.3 | 46.3 | 47.7 |
| 22 | 49.9 | 50.9 | 51.2 | 51.2 | 50.9 | 50.9 | 50.9 | 50.9 | 50.6 | 49.9 | 49.2 | 49.2 |
| 23 | 49.6 | 49.6 | 48.9 | 48.3 | 48.3 | 46.7 | 47.0 | 47.0 | 47.0 | 46.7 | 45.7 | 46.7 |
| 24 | 47.7 | 47.0 | 46.0 | 45.7 | 45.7 | 45.7 | 45.4 | 44.0 | 44.7 | 46.3 | 47.7 | 49.9 |
| 25 | 47.0 | 45.7 | 42.7 | 44.4 | 42.1 | 39.2 | 38.9 | 39.5 | 40.8 | 41.2 | 40.5 | 41.8 |
| 26 | 42.7 | 41.2 | 41.5 | 41.2 | 40.2 | 39.2 | 39.5 | 39.2 | 38.9 | 38.6 | 38.6 | 39.8 |
| 27 | 40.2 | 40.8 | 39.5 | 39.2 | 37.0 | 34.3 | 32.4 | 33.1 | 32.5 | 34.0 | 35.7 | 38.6 |
| 28 | 42.7 | 43.7 | 43.1 | 42.7 | 42.7 | 42.1 | 42.7 | 42.1 | 41.8 | 41.2 | 39.8 | 40.2 |
| 29 | 42.1 | 42.1 | 41.8 | 42.7 | 40.8 | 39.8 | 38.0 | 35.7 | 35.0 | 35.7 | 36.6 | 36.0 |
| 30 | 40.8 | 42.1 | 41.5 | 40.8 | 40.5 | 38.9 | 37.3 | 37.3 | 37.0 | 34.3 | 33.1 | 32.5 |
| 31 | 34.3 | 35.7 | 36.0 | 36.6 | 37.0 | 36.3 | 36.3 | 36.3 | 36.6 | 34.6 | 32.8 | 33.4 |
| Mean | 45.7 | 45.4 | 45.0 | 44.3 | 43.8 | 43.4 | 42.9 | 42.7 | 42.5 | 42.5 | 42.4 | 43.7 |

Reduction to Standard + 0°.3.

ANEMOGRAPH. DIRECTION.

JANUARY, 1857.

| HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | | |
|---------------------------|------------------|---------------|------------------|---------------|-------------------|----------------|-------------------|----------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| 1856. Dec. 31 | Div. | Div. | Div. | Div. | Div. | Div. | Div. (11.0) | Div. (11.0) | Div. (11.0) | Div. (11.5) | Div. (11.5) | Div. (11.5) | | | |
| 1857. Jan. 1 | 11.0 | 11.0 | 11.0 | 10.5 | 12.0 | 12.0 | 12.0 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | | | |
| 2 | 12.0 | 12.0 | 11.5 | 11.0 | 11.0 | 11.0 | 11.0 | 8.5 | 8.0 | 8.0 | 8.0 | 12.0 | | | |
| 3 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | | | |
| 4 | 13.0 | 14.0 | 15.0 | 0.5 | 5.0 | 7.5 | 12.0 | 14.0 | 1.0 | 11.0 | 11.5 | 11.5 | | | |
| 5 | 12.0 | 12.0 | 13.0 | 13.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | | | |
| 6 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | | | |
| 7 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | | | |
| 8 | 15.0 | 15.0 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 15.0 | 15.0 | 15.0 | | | |
| 9 | 15.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 1.0 | 0.5 | 15.5 | 14.0 | 0.5 | 3.0 | | | |
| 10 | 1.0 | 13.0 | 0.0 | 3.0 | 12.5 | 15.5 | 15.5 | 0.0 | 2.5 | 3.0 | 2.5 | 2.5 | | | |
| 11 | 2.5 | 2.5 | 4.0 | 4.0 | 4.0 | 2.0 | 1.0 | 1.5 | 0.5 | 0.5 | 0.5 | 0.5 | | | |
| 12 | 15.0 | 15.0 | 14.5 | 14.5 | 14.5 | 14.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | | | |
| 13 | 11.5 | 11.5 | 11.0 | 10.0 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | | | |
| 14 | 11.5 | 11.5 | 11.0 | 11.0 | 11.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.5 | 8.0 | 8.0 | | | |
| 15 | 9.5 | 9.5 | 10.5 | 10.5 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 10.0 | 10.0 | 10.0 | | | |
| 16 | 9.0 | 11.0 | 10.5 | 10.5 | 10.5 | 10.5 | 9.5 | 9.0 | 9.0 | 9.0 | 9.5 | 9.5 | | | |
| 17 | 9.5 | 9.5 | 9.0 | 9.0 | 9.0 | 9.0 | 9.5 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | | |
| 18 | 9.0 | 9.0 | 9.5 | 9.0 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 14.5 | 12.0 | | | |
| 19 | 12.5 | 13.0 | 12.0 | 12.0 | 12.0 | 12.0 | 11.5 | 6.5 | 10.0 | 10.0 | 8.5 | 8.0 | | | |
| 20 | 11.0 | 12.0 | 11.0 | 9.5 | 10.5 | 10.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| 21 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 12.0 | 12.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | | |
| 22 | 10.5 | 9.5 | 9.5 | 10.0 | 8.5 | 8.5 | 10.0 | 11.0 | 9.0 | 9.5 | 9.5 | 9.0 | | | |
| 23 | 9.0 | 8.5 | 10.5 | 10.0 | 9.0 | 7.5 | 7.5 | 10.0 | 10.0 | 10.5 | 11.5 | 11.0 | | | |
| 24 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |  |
| 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |  |
| 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |  |
| 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |  |
| 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |  |
| 29 | ..... | ..... | (11.0) | (10.5) | (10.5) | (10.5) | (10.5) | (10.5) | (10.5) | (10.5) | (10.5) | (10.5) | | | |
| 30 | 11.0 | 11.0 | 11.0 | 7.5 | 7.5 | 7.5 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| 31 | 12.5 | 11.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | | | |
| Mean of 25 days | { 268° | 267° | 262° | 245° | 253° | 258° | 266° | 267° | 264° | 254° | 265° | 263° | | | |
| Inten- sity | { .61 | .67 | .62 | .47 | .50 | .47 | .57 | .46 | .44 | .50 | .44 | .45 | | | |
| 0 { N 0° | 1 { NNE 22° 5 | 2 { NE 45° | 3 { ENE 67° 5 | 4 { E 90° | 5 { ESE 112° 5 | 6 { SE 135° | 7 { SSE 157° ½ | 8 { S 180° | 9 { SSW 202° 5 | 10 { SW 225° | 11 { WSW 247° ½ | 12 { W 270° | 13 { WNW 292° 5 | 14 { NW 315° | 15 { NNW 337° 5 |

ANEMOGRAPH. VELOCITY.

JANUARY, 1857.

HOURS RECKONED FROM NOON.

| Day. | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|----------------|----------------|----------------|----------------|----------------|
| 1856. Dec. 31 | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. 4.5 | Miles. 23.0 | Miles. 19.0 | Miles. 19.0 | Miles. 10.5 | Miles. 15.0 |
| 1857. Jan. 1 | 17.5 | 29.5 | 16.0 | 12.0 | 13.5 | 11.0 | 12.0 | 16.0 | 19.0 | 17.5 | 17.5 | 25.5 |
| 2 | 28.5 | 29.0 | 23.0 | 19.0 | 12.0 | 17.5 | 9.5 | 9.5 | 9.5 | 15.0 | 15.0 | 22.0 |
| 3 | 38.5 | 30.5 | 29.5 | 43.5 | 40.5 | 36.5 | 38.0 | 35.5 | 35.0 | 35.0 | 35.0 | 26.0 |
| 4 | 18.5 | 13.5 | 13.0 | 17.0 | 17.5 | 23.0 | 23.0 | 26.0 | 29.5 | 30.0 | 29.5 | 17.5 |
| 5 | 30.0 | 23.5 | 27.0 | 17.0 | 18.0 | 16.0 | 16.0 | 16.0 | 13.0 | 20.0 | 17.0 | 25.0 |
| 6 | 23.0 | 20.0 | 26.0 | 27.0 | 24.0 | 14.5 | 17.0 | 17.0 | 20.0 | 8.0 | 4.5 | 8.0 |
| 7 | 10.5 | 6.5 | 5.0 | 4.0 | 2.0 | 3.0 | 4.0 | 2.0 | 6.0 | 10.5 | 6.0 | 7.5 |
| 8 | 6.5 | 5.0 | 5.0 | 2.0 | 2.0 | 2.0 | 2.0 | 5.0 | 4.0 | 9.0 | 13.5 | 13.5 |
| 9 | 16.0 | 16.0 | 17.5 | 14.5 | 12.0 | 17.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 21.5 |
| 10 | 12.0 | 20.0 | 16.0 | 16.0 | 13.0 | 16.0 | 12.0 | 7.5 | 4.0 | 2.0 | 8.0 | 17.0 |
| 11 | 21.0 | 20.0 | 16.0 | 10.5 | 13.5 | 9.0 | 12.0 | 10.5 | 7.5 | 12.0 | 4.0 | 3.0 |
| 12 | 4.5 | 4.5 | 8.0 | 7.5 | 3.0 | 5.0 | 8.0 | 8.0 | 6.0 | 8.0 | 8.0 | 9.0 |
| 13 | 5.0 | 6.5 | 8.0 | 8.0 | 8.0 | 6.5 | 6.0 | 8.0 | 6.5 | 8.0 | 7.5 | 6.5 |
| 14 | 8.0 | 8.0 | 6.5 | 3.0 | 4.5 | 8.0 | 4.5 | 2.0 | 4.0 | 4.0 | 5.0 | 8.0 |
| 15 | 8.0 | 9.0 | 6.5 | 6.5 | 6.0 | 4.0 | 4.0 | 3.0 | 6.0 | 6.0 | 6.5 | 14.5 |
| 16 | (13.0) | (11.0) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 17 | ..... | ..... | ..... | (10.5) | (9.5) | (9.5) | (16.0) | (18.0) | (16.5) | (14.5) | (9.5) | ..... |
| 18 | ..... | ..... | (23.0) | (17.5) | (17.5) | (19.0) | (25.0) | (21.0) | (25.5) | (25.0) | (15.0) | (4.0) |
| 19 | 8.0 | 8.0 | 6.0 | 4.5 | 4.5 | 3.0 | 5.0 | 5.0 | 9.5 | 13.0 | 13.5 | 15.0 |
| 20 | 13.0 | 10.5 | 9.0 | 7.5 | 12.0 | 13.0 | 11.0 | 7.5 | 7.5 | 10.5 | 7.5 | 13.5 |
| 21 | 9.5 | 11.0 | 9.5 | 6.5 | 6.5 | 4.5 | 2.0 | 7.5 | 5.0 | 5.0 | 4.0 | 4.0 |
| 22 | 6.5 | 10.5 | 12.0 | 16.5 | 31.5 | 23.0 | 23.0 | 22.0 | 9.5 | 17.5 | 23.5 | 20.0 |
| 23 | (28.5) | (23.0) | (25.0) | (23.0) | (25.0) | (24.0) | (32.0) | (29.5) | ..... | ..... | ..... | ..... |
| 24 | 9.5 | 7.5 | 8.0 | 11.0 | 15.0 | 13.0 | 13.0 | 16.5 | 16.5 | 21.0 | 22.0 | 21.0 |
| 25 | 23.0 | 30.5 | 25.5 | 20.0 | 18.0 | 27.0 | 8.0 | 11.0 | 14.5 | 17.0 | 16.5 | 21.0 |
| 26 | 17.5 | 13.5 | 17.5 | 17.5 | 22.5 | 19.0 | 17.5 | 16.5 | 17.5 | 17.5 | 16.0 | 16.0 |
| 27 | 16.0 | 14.5 | 11.0 | 7.5 | 9.0 | 11.0 | 3.0 | 1.0 | 1.0 | 1.0 | 0.0 | 4.0 |
| 28 | 5.0 | 6.0 | 4.5 | 8.0 | 2.0 | 3.0 | 12.0 | 14.5 | 5.0 | 3.0 | 6.0 | 8.0 |
| 29 | 13.5 | 10.5 | 6.0 | 4.0 | 2.0 | 4.0 | 14.5 | 8.0 | 10.5 | 5.0 | 8.0 | 4.0 |
| 30 | 13.5 | 12.0 | 10.5 | 8.0 | 6.5 | 13.0 | 9.5 | 14.5 | 5.0 | 4.0 | 5.0 | 5.0 |
| 31 | 8.0 | 11.0 | 8.0 | 4.5 | 4.5 | 4.0 | 5.0 | 4.5 | 6.0 | 10.5 | 9.0 | 11.0 |
| Sum of 27 days | 390.5 | 387.0 | 340.5 | 323.0 | 321.5 | 326.5 | 307.5 | 310.5 | 293.5 | 326.0 | 324.0 | 367.0 |
| Mean | 14.5 | 14.3 | 12.6 | 12.0 | 11.9 | 12.1 | 11.4 | 11.5 | 10.9 | 12.1 | 12.0 | 13.6 |
| Relative Velocity | 1.17 | 1.15 | 1.02 | 0.97 | 0.96 | 0.98 | 0.92 | 0.93 | 0.88 | 0.98 | 0.97 | 1.09 |

ANEMOGRAPH. DIRECTION.

FEBRUARY, 1857.

| HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | | |
|---------------------------|------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 5.5 | 3.0 | 15.5 | 15.5 | 15.5 | 15.5 | 0.0 | 0 0 | 0.0 | 6.0 | 6.5 | 6.0 | | | |
| 2 | 6.5 | 7.0 | 6.0 | 6.0 | 5.5 | 4.0 | 3.5 | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 3 | 2.5 | 2.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| 4 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| 5 | 15.0 | 10.0 | 10.0 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.5 | 10.5 | | | |
| 6 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | 11.0 | 11.0 | 11.0 | 7.0 | 10.5 | 11.0 | | | |
| 7 | 11.0 | 11.0 | 10.0 | 7.0 | 7.5 | 7.0 | 7.0 | 7.5 | 6.5 | 7.0 | 7.0 | 7.5 | | | |
| 8 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.5 | 7.0 | 6.0 | 6.5 | 7.0 | 7.0 | 7.0 | | | |
| 9 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 10.5 | 11.0 | 7.5 | 7.0 | | | |
| 10 | 11.0 | 11.0 | 10.0 | 10.5 | 10.5 | 10.5 | 8.0 | 10.0 | 10.0 | 10.0 | 10.5 | 10.5 | | | |
| 11 | 10.5 | 10.5 | 11.0 | 11.0 | 11.0 | 14.5 | 15.0 | 15.0 | 11.0 | 11.0 | 10.5 | 11.0 | | | |
| 12 | 11.0 | 11.0 | 11.5 | 11.5 | 11.5 | 10.5 | 10.5 | 11.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 13 | 11.0 | 11.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 14 | 8.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 3.0 | 3.0 | 3.0 | | | |
| 15 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 4.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 16 | 7.0 | 6.5 | 7.0 | 7.0 | 6.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 17 | 7.0 | 6.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 18 | 7.5 | 11.0 | 10.5 | 10.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | | | |
| 19 | 8.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 10.0 | | | |
| 20 | 7.5 | 10.5 | 9.0 | 8.5 | 10.5 | 9.5 | 10.0 | 10.0 | 9.0 | 9.0 | 7.5 | 11.0 | | | |
| 21 | 11.0 | 11.0 | 11.0 | 10.5 | 8.0 | 8.0 | 10.0 | 8.0 | 8.0 | 7.5 | 11.0 | 11.0 | | | |
| 22 | 11.0 | 11.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 23 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 5.5 | 6.5 | 6.0 | 6.0 | | | |
| 24 | 5.0 | 5.5 | 6.5 | 3.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 25 | 10.0 | 12.0 | 13.5 | 15.5 | 15.5 | 15.5 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | | |
| 26 | 14.0 | 14.0 | 11.0 | 10.5 | 10.5 | 10.5 | 10.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | | | |
| 27 | 8.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.5 | 10.0 | 9.5 | 11.0 | 11.0 | | | |
| 28 | 12.0 | 11.0 | 13.0 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 0.5 | | | |
| Mean | 200° | 214° | 206° | 195° | 190° | 185° | 189° | 181° | 186° | 175° | 180° | 188° | | | |
| Inten- sity | .38 | .33 | .35 | .22 | .29 | .27 | .33 | .33 | .42 | .47 | .44 | .43 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

ANEMOGRAPHIC VELOCITY.

FEBRUARY, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|-------------------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 9.0 | 11.0 | 4.0 | 2.0 | 2.0 | 7.5 | 6.0 | 6.0 | 4.5 | 9.5 | 12.0 | 9.5 |
| 2 | 8.0 | 12.0 | 9.0 | 9.5 | 10.5 | 11.0 | 16.0 | 18.0 | 15.0 | 15.0 | 16.0 | 17.5 |
| 3 | 22.5 | 18.0 | 16.0 | 9.0 | 6.5 | 14.5 | 8.0 | 4.5 | 6.0 | 9.0 | 3.0 | 4.0 |
| 4 | 7.5 | 7.5 | 6.5 | 4.5 | 1.0 | 1.0 | 1.0 | 1.0 | 4.5 | 4.5 | 5.0 | 6.0 |
| 5 | 9.5 | 11.0 | 12.0 | 8.0 | 5.0 | 9.5 | 6.5 | 8.0 | 11.0 | 17.0 | 20.0 | 20.0 |
| 6 | 22.0 | 21.0 | 20.0 | 5.0 | 4.5 | 5.0 | 11.0 | 13.5 | 10.5 | 9.5 | 8.0 | 13.5 |
| 7 | 15.0 | 14.5 | 15.0 | 9.0 | 10.5 | 9.0 | 16.5 | 11.0 | 7.5 | 13.0 | 13.0 | 10.5 |
| 8 | 13.0 | 13.0 | 13.0 | 13.0 | 12.0 | 7.5 | 12.0 | 9.5 | 11.0 | 11.0 | 10.5 | 11.0 |
| 9 | 17.5 | 17.0 | 20.0 | 17.0 | 19.0 | 21.0 | 17.5 | 18.0 | 22.0 | 12.0 | 8.0 | 10.5 |
| 10 | 12.0 | 12.0 | 15.0 | 8.0 | 9.0 | 8.0 | 6.0 | 9.0 | 12.0 | 16.0 | 21.0 | 21.0 |
| 11 | 23.0 | 32.0 | 32.0 | 26.0 | 32.5 | 22.0 | 6.5 | 4.0 | 11.0 | 7.5 | 11.0 | 16.0 |
| 12 | 17.5 | 16.0 | 13.5 | 8.0 | 6.5 | 9.5 | 8.0 | 10.5 | 9.0 | 12.0 | 11.0 | 11.0 |
| 13 | 13.5 | 17.0 | 13.0 | 10.5 | 11.0 | 9.5 | 4.0 | 6.5 | 2.0 | 2.0 | 4.5 | 4.5 |
| 14 | 7.5 | 4.5 | 6.0 | 2.0 | 1.0 | 1.0 | 1.0 | 2.0 | 5.0 | 12.0 | 13.5 | 11.0 |
| 15 | 13.5 | 15.0 | 16.0 | 13.5 | 4.5 | 4.5 | 5.0 | 3.0 | 4.5 | 0.0 | 2.0 | 4.0 |
| 16 | 3.0 | 8.0 | 6.0 | 5.0 | 9.5 | 5.0 | 6.0 | 2.0 | 5.0 | 5.0 | 4.5 | 6.0 |
| 17 | 6.0 | 6.0 | 4.0 | 4.5 | 4.5 | 5.0 | 2.0 | 1.0 | 1.0 | 2.0 | 6.0 | 7.5 |
| 18 | 11.0 | 9.5 | 10.5 | 9.0 | 3.0 | 4.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 3.0 |
| 19 | 3.0 | 7.5 | 5.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 3.0 | 6.5 |
| 20 | 5.0 | 6.0 | 9.0 | 6.0 | 8.0 | 5.0 | 6.0 | 8.0 | 2.0 | 4.5 | 5.0 | 6.5 |
| 21 | 13.5 | 16.5 | 13.0 | 15.0 | 12.0 | 9.5 | 7.5 | 9.0 | 9.0 | 7.5 | 9.0 | 9.0 |
| 22 | 12.0 | 16.0 | 9.5 | 13.0 | 8.0 | 5.0 | 5.0 | 5.0 | 4.0 | 1.0 | 1.0 | 2.0 |
| 23 | 4.5 | 9.5 | 6.0 | 5.0 | 2.0 | 2.0 | 1.0 | 2.0 | 4.0 | 6.0 | 6.5 | 6.0 |
| 24 | 8.0 | 8.0 | 6.5 | 4.5 | 6.0 | 5.0 | 3.0 | 1.0 | 1.0 | 2.0 | 2.0 | 4.0 |
| 25 | 6.5 | 9.5 | 8.0 | 7.5 | 4.0 | 4.0 | 4.0 | 2.0 | 3.0 | 1.0 | 4.5 | 3.0 |
| 26 | 3.0 | 3.0 | 9.5 | 5.0 | 1.0 | 4.0 | 3.0 | 4.0 | 6.0 | 3.0 | 4.5 | 4.5 |
| 27 | 8.0 | 16.0 | 16.0 | 10.5 | 6.0 | 4.5 | 9.0 | 6.5 | 8.0 | 10.5 | 7.5 | 13.0 |
| 28 | 14.5 | 8.0 | 6.5 | 4.0 | 0.0 | 2.0 | 1.0 | 2.0 | 1.0 | 4.5 | 4.5 | 10.5 |
| Sum | 309.0 | 344.0 | 320.5 | 236.0 | 200.5 | 196.5 | 174.5 | 169.0 | 182.5 | 201.0 | 217.5 | 251.5 |
| Mean | 11.0 | 12.3 | 11.5 | 8.4 | 7.2 | 7.0 | 6.2 | 6.0 | 6.5 | 7.2 | 7.8 | 9.0 |
| Relative Velocity | 1.32 | 1.47 | 1.38 | 1.01 | 0.86 | 0.85 | 0.74 | 0.72 | 0.78 | 0.86 | 0.93 | 1.08 |

ANEMOGRAPH. DIRECTION.

MARCH, 1857.

| HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | | |
|---------------------------|------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 2.0 | 2.5 | 2.5 | 2.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 2 | 2.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 3 | 3.0 | 3.0 | 3.0 | 3.0 | 3.5 | 6.5 | 10.0 | 10.5 | 10.5 | 10.5 | 11.0 | 10.5 | | | |
| 4 | 11.0 | 11.0 | 11.0 | 11.0 | 15.0 | 14.5 | 14.5 | 13.5 | 13.5 | 13.5 | 11.0 | 11.0 | | | |
| 5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 6 | 10.5 | 10.5 | 11.5 | 11.0 | 11.5 | 11.5 | 11.5 | 11.0 | 10.5 | 10.5 | 10.0 | 11.0 | | | |
| 7 | 11.0 | 11.0 | 11.0 | 12.0 | 11.0 | 10.5 | 10.5 | 10.5 | 10.0 | 10.5 | 10.5 | 11.0 | | | |
| 8 | 11.0 | 11.0 | 12.0 | 11.5 | 11.0 | 11.0 | 11.0 | 13.0 | 14.0 | 14.5 | 0.0 | 0.0 | | | |
| 9 | 0.0 | 0.0 | 15.5 | 15.0 | 15.0 | 15.0 | 14.5 | 14.0 | 14.0 | 14.0 | 14.0 | 15.5 | | | |
| 10 | 0.0 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 0.0 | 7.0 | | | |
| 11 | 7.0 | 7.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.5 | 9.0 | 11.0 | | | |
| 12 | 11.0 | 11.0 | 11.5 | 10.0 | 10.0 | 10.5 | 7.5 | 7.0 | 7.0 | 7.5 | 7.0 | 7.0 | | | |
| 13 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 10.5 | 10.5 | | | |
| 14 | 10.5 | 10.5 | 11.0 | 10.5 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| 15 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.5 | | | |
| 16 | 10.5 | 10.5 | 10.0 | 10.0 | 8.5 | 7.5 | 7.5 | 6.5 | 6.5 | 6.5 | 3.5 | 6.5 | | | |
| 17 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.0 | | | |
| 18 | 6.5 | 7.5 | 6.5 | 6.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 15.0 | 15.0 | 15.5 | | | |
| 19 | 0.5 | 2.0 | 2.0 | 2.0 | 2.5 | 6.0 | 6.0 | 6.0 | 6.0 | 4.0 | 4.0 | 3.5 | | | |
| 20 | 4.0 | 3.5 | 3.0 | 2.5 | 2.5 | 2.5 | 3.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 21 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 1.5 | 1.5 | 1.5 | 0.0 | 15.5 | 15.5 | 15.5 | | | |
| 22 | 15.5 | 15.5 | 15.5 | 15.5 | 14.0 | 12.5 | 13.0 | 13.0 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 23 | 10.0 | 10.5 | 10.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | 6.5 | 6.5 | 6.5 | 7.0 | | | |
| 24 | 7.0 | 6.5 | 3.5 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 25 | 5.0 | 7.0 | 7.0 | 7.0 | 11.0 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 26 | 14.0 | 14.0 | 13.0 | 14.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | | | |
| 27 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 1.0 | | | |
| 28 | 3.0 | 3.5 | 3.5 | 3.5 | 5.0 | 3.5 | 5.5 | 3.5 | 6.0 | 6.5 | 7.0 | 7.0 | | | |
| 29 | 7.0 | 7.0 | 6.5 | 7.0 | 6.0 | 6.5 | 6.5 | 6.5 | 6.0 | 7.0 | 9.5 | 10.5 | | | |
| 30 | 10.5 | 10.5 | 10.5 | 10.5 | 11.0 | 11.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 31 | 10.5 | 10.5 | 11.0 | 13.5 | 11.5 | 12.5 | 11.5 | 11.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| Meandi- rection | 219° | 206° | 217° | 241° | 230° | 227° | 208° | 197° | 201° | 226° | 271° | 240° | | | |
| Inten- sity | .14 | .20 | .10 | .14 | .09 | .12 | .19 | .10 | .21 | .17 | .16 | .25 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

March 30. The reading at 0^h is interpolated, the carriage having stopped.

ANEMOGRAPH. VELOCITY.

MARCH, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|----------------------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
| | Miles | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 9.0 | 14.5 | 14.5 | 9.5 | 8.0 | 8.0 | 4.5 | 6.5 | 6.5 | 10.5 | 9.0 | 10.5 |
| 2 | 13.0 | 11.0 | 8.0 | 6.5 | 3.0 | 5.0 | 6.0 | 4.5 | 2.0 | 4.0 | 3.0 | 7.5 |
| 3 | 4.5 | 4.5 | 4.0 | 3.0 | 4.0 | 4.0 | 4.5 | 11.0 | 9.0 | 9.5 | 12.0 | 18.0 |
| 4 | 23.5 | 25.0 | 29.5 | 18.0 | 13.0 | 16.0 | 8.0 | 5.0 | 6.0 | 2.0 | 6.5 | 6.5 |
| 5 | (10.5) | ..... | ..... | (16.5) | (19.0) | (32.5) | (31.5) | (29.5) | (29.5) | (17.5) | (17.5) | (13.5) |
| 6 | 16.0 | 14.5 | 17.5 | 13.5 | 9.5 | 10.5 | 6.5 | 15.0 | 16.5 | 9.0 | 12.0 | 6.5 |
| 7 | 23.0 | 20.0 | 11.0 | 19.0 | 12.0 | 13.5 | 9.5 | 14.5 | 14.5 | 21.0 | 26.0 | 32.0 |
| 8 | 30.0 | 24.0 | 17.5 | 17.0 | 19.0 | 19.0 | 13.5 | 9.0 | 7.5 | 14.5 | 17.0 | 23.0 |
| 9 | 32.0 | 32.0 | 29.5 | 18.0 | 17.0 | 9.5 | 8.0 | 8.0 | 6.5 | 4.0 | 4.0 | 10.5 |
| 10 | 9.5 | 6.0 | 4.5 | 2.0 | 1.0 | 1.0 | 3.0 | 4.0 | 2.0 | 2.0 | 4.0 | 6.5 |
| 11 | 10.5 | 11.0 | 9.0 | 8.0 | 6.0 | 2.0 | 4.0 | 3.0 | 0.0 | 4.0 | 5.0 | 9.0 |
| 12 | 8.0 | 10.5 | 9.0 | 3.0 | 7.5 | 9.0 | 5.0 | 8.0 | 8.0 | 10.5 | 15.0 | 21.0 |
| 13 | 22.5 | 21.0 | 23.0 | 22.5 | 11.0 | 8.0 | 10.5 | 13.0 | 21.0 | 29.5 | 23.5 | 37.0 |
| 14 | 47.0 | 29.5 | 56.0 | 30.0 | 14.5 | 12.0 | 29.5 | 32.0 | 34.0 | 47.5 | 46.0 | 39.0 |
| 15 | 36.5 | 39.0 | 49.0 | 35.0 | 29.5 | 29.5 | 22.0 | 37.0 | 22.5 | 20.0 | 8.0 | 9.5 |
| 16 | 22.5 | 21.0 | 19.0 | 9.5 | 7.5 | 5.0 | 6.5 | 5.0 | 4.5 | 4.0 | 5.0 | 10.5 |
| 17 | 13.0 | 12.0 | 10.5 | 11.0 | 6.5 | 4.0 | 2.0 | 1.0 | 1.0 | 3.0 | 4.0 | 4.5 |
| 18 | 7.5 | 10.5 | 8.0 | 7.5 | 4.5 | 1.0 | 2.0 | 2.0 | 3.0 | 6.5 | 9.5 | 11.0 |
| 19 | 6.5 | 7.5 | 4.0 | 4.0 | 3.0 | 4.0 | 2.0 | 1.0 | 3.0 | 6.5 | 7.5 | 8.0 |
| 20 | 11.0 | 9.5 | 16.0 | 16.0 | 17.0 | 15.0 | 16.0 | 18.0 | 20.0 | 20.0 | 27.0 | 22.0 |
| 21 | 34.5 | 31.5 | 30.5 | 33.5 | 25.5 | 23.5 | 17.0 | 16.5 | 12.0 | 12.0 | 7.5 | 13.5 |
| 22 | 28.0 | 20.0 | 17.0 | 12.0 | 10.0 | 6.5 | 3.5 | 5.0 | 10.0 | 14.5 | 12.0 | 17.0 |
| 23 | 11.5 | 16.0 | 8.0 | 9.0 | 8.0 | 7.5 | 6.5 | 5.0 | 5.0 | 2.5 | 4.0 | 10.0 |
| 24 | 10.5 | 10.0 | 9.0 | 9.0 | 19.5 | 24.0 | 18.5 | 20.0 | 18.0 | 16.0 | 18.0 | 18.0 |
| 25 | 11.5 | 11.5 | 11.5 | 6.0 | 17.0 | 17.0 | 16.0 | 7.5 | 2.5 | 3.5 | 6.0 | 10.0 |
| 26 | 4.5 | 5.0 | 4.0 | 6.0 | 6.0 | 6.0 | 2.5 | 2.0 | 2.0 | 2.0 | 4.0 | 4.0 |
| 27 | 4.0 | 2.5 | 2.5 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 1.0 | 2.0 | 7.5 |
| 28 | 10.0 | 10.5 | 10.0 | 10.0 | 8.0 | 7.5 | 6.0 | 8.0 | 6.0 | 6.5 | 7.5 | 7.5 |
| 29 | 12.0 | 14.0 | 11.5 | 13.0 | 8.0 | 6.0 | 4.0 | 1.0 | 4.0 | 9.0 | 13.0 | 10.5 |
| 30 | 15.0 | 16.0 | 19.0 | 23.0 | 23.5 | 24.0 | 22.0 | 17.0 | 14.5 | 14.5 | 11.0 | 13.5 |
| 31 | 14.5 | 17.5 | 18.0 | 9.5 | 12.0 | 9.5 | 8.0 | 9.5 | 8.0 | 8.0 | 16.0 | 12.0 |
| Sum of 30 days | 501.5 | 477.5 | 480.5 | 395.0 | 331.0 | 307.5 | 268.0 | 289.0 | 271.5 | 317.5 | 345.0 | 416.0 |
| Mean | 16.7 | 15.9 | 16.0 | 13.2 | 11.0 | 10.3 | 8.9 | 9.6 | 9.0 | 10.6 | 11.5 | 13.9 |
| Relative Velocity | 1.37 | 1.31 | 1.32 | 1.08 | 0.91 | 0.85 | 0.73 | 0.79 | 0.74 | 0.87 | 0.94 | 1.14 |

March 30. The reading at 22—0 is interpolated, the carriage having stopped.

ANEMOGRAPH. DIRECTION.

APRIL, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | |
|--------------------|---------------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 11.0 | 10.0 | 7.0 | 6.0 | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 2 | 11.0 | 11.0 | 11.0 | 7.0 | 7.0 | 6.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 10.5 | | | |
| 3 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.0 | 9.0 | 5.5 | 6.5 | | | |
| 4 | 6.5 | 6.5 | 6.5 | 6.5 | 7.0 | 7.5 | 7.0 | 7.0 | 6.5 | 6.5 | 6.5 | 6.5 | | | |
| 5 | 7.0 | 6.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.5 | 6.5 | | | |
| 6 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.5 | 10.5 | 10.5 | | | |
| 7 | 10.5 | 10.5 | 10.5 | 10.0 | 9.5 | 10.0 | 10.5 | 10.5 | 7.5 | 7.5 | 10.0 | 10.5 | | | |
| 8 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 10.5 | 8.0 | 7.5 | 6.5 | 6.5 | 6.5 | 6.0 | | | |
| 9 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 10 | 7.0 | 7.0 | 7.0 | 7.0 | 9.0 | 12.0 | 0 0 | 0 0 | 0 0 | 14.0 | 15.0 | 0 0 | | | |
| 11 | 0 0 | 0 0 | 12.5 | 11.0 | 10.0 | 10.5 | 10.0 | 10.0 | 10.5 | 11.0 | 11.0 | 11.0 | | | |
| 12 | 11.0 | 11.0 | 10.5 | 10.0 | 9.5 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| 13 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 12.0 | 11.5 | 11.5 | 11.0 | 11.0 | 12.5 | 12.0 | | | |
| 14 | 12.0 | 12.0 | 13.5 | 0.5 | 10.5 | 11 0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 10.0 | | | |
| 15 | 11.0 | 10.5 | 10.5 | 9.5 | 10.5 | 10.5 | 8.0 | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| 16 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 17 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 18 | 7.0 | 7.0 | 7.0 | 6.5 | 5.0 | 6.5 | 7.0 | 6.0 | 6.5 | 7.5 | 10.5 | 10.5 | | | |
| 19 | 10.5 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 20 | 10.5 | 10.5 | 12.0 | 12.5 | 12.5 | 12.5 | 10.5 | 10.5 | 10.0 | 9.5 | 11.5 | 0 0 | | | |
| 21 | 0 0 | 0 0 | 0 0 | 14.0 | 13.5 | 11.0 | 11.5 | 10.5 | 10.5 | 11.0 | 11.0 | 11.0 | | | |
| 22 | 11.0 | 11.0 | 0 0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | | | |
| 23 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.5 | 1.5 | | | |
| 24 | 2.0 | 7.0 | 6.5 | 7.0 | 6.5 | 5 0 | 4.0 | 4.5 | 4.5 | 4.5 | 4.0 | 5.5 | | | |
| 25 | 5.0 | 4.0 | 4.0 | 3.0 | 2.0 | 2.5 | 1.5 | 2.0 | 2 0 | 1.5 | 2.0 | 2.0 | | | |
| 26 | 2.0 | 2.0 | 1.5 | 1.5 | 1.5 | 0 0 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 1.5 | | | |
| 27 | 1.5 | 1.0 | 1.0 | 1.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0 0 | 15.5 | 1.5 | | | |
| 28 | 15.5 | 1.0 | 0 0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 15.5 | | | |
| 29 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | | | |
| 30 | 1.5 | 1.5 | 15.5 | 15.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.5 | 15.5 | | | |
| Meandi- rection | { 230° | 221° | 227° | 183° | 186° | 222° | 200° | 192° | 173° | 185° | 252° | 214° | | | |
| Inten- sity | { .21 | .28 | .20 | .19 | .23 | .20 | .17 | .17 | .22 | .19 | .07 | .08 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

April 3. The direction under 0^h is interpolated, the instrument having been stopped at that time.

ANEMOGRAPH. VELOCITY.

APRIL, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|----------------------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 10.5 | 11.0 | 13.5 | 10.5 | 7.5 | 10.5 | 12.0 | 13.0 | 15.0 | 13.5 | 12.0 | 16.0 |
| 2 | 23.0 | 23.0 | 19.0 | 13.5 | 11.0 | 9.0 | 5.0 | 2.0 | 4.0 | 2.0 | 3.0 | 6.0 |
| 3 | ..... | (12.0) | (17.0) | (11.0) | (13.0) | (8.0) | (4.5) | (6.5) | (1.0) | (1.0) | (4.5) | (6.0) |
| 4 | 6.0 | 9.0 | 8.0 | 8.0 | 7.5 | 6.5 | 6.5 | 10.5 | 6.0 | 4.0 | 6.0 | 5.0 |
| 5 | 6.5 | 6.5 | 9.0 | 4.5 | 3.0 | 1.0 | 1.0 | 1.0 | 0.0 | 1.0 | 5.0 | 4.0 |
| 6 | 4.5 | 12.0 | 11.0 | 17.5 | 9.5 | 6.0 | 8.0 | 10.5 | 6.0 | 1.0 | 4.0 | 9.5 |
| 7 | 10.5 | 20.0 | 16.5 | 17.5 | 11.0 | 10.5 | 8.0 | 7.5 | 4.0 | 5.0 | 5.0 | 9.5 |
| 8 | 12.0 | 10.5 | 12.0 | 14.5 | 13.0 | 8.0 | 4.5 | 12.0 | 5.0 | 4.0 | 4.5 | 6.0 |
| 9 | 11.0 | 10.5 | 11.0 | 8.0 | 3.0 | 4.0 | 1.0 | 2.0 | 1.0 | 1.0 | 1.0 | 2.0 |
| 10 | 4.5 | 5.0 | 5.0 | 2.0 | 2.0 | 6.0 | 6.0 | 2.0 | 4.0 | 9.0 | 13.0 | 13.0 |
| 11 | 10.5 | 13.0 | 11.0 | 16.5 | 15.0 | 16.5 | 14.5 | 13.5 | 13.0 | 12.0 | 20.0 | 21.0 |
| 12 | 16.0 | 25.0 | 23.0 | 18.0 | 10.5 | 15.0 | 16.0 | 17.0 | 22.5 | 24.0 | 26.0 | 17.0 |
| 13 | 23.0 | 17.0 | 22.0 | 17.0 | 17.5 | 11.0 | 13.5 | 10.5 | 12.0 | 12.0 | 9.5 | 9.5 |
| 14 | 7.5 | 11.0 | 9.5 | 6.5 | 11.0 | 7.5 | 2.0 | 2.0 | 4.0 | 5.0 | 6.5 | 9.5 |
| 15 | 9.5 | 12.0 | 13.5 | 9.0 | 5.0 | 3.0 | 4.0 | 3.0 | 4.0 | 1.0 | 4.5 | 9.0 |
| 16 | 7.5 | 9.0 | 11.0 | 8.0 | 3.0 | 3.0 | 5.0 | 4.0 | 6.5 | 9.0 | 11.0 | 12.0 |
| 17 | 13.5 | 14.5 | 20.0 | 19.0 | 16.0 | 11.0 | 9.0 | 9.0 | 6.5 | 8.0 | 9.0 | 11.0 |
| 18 | 12.0 | 16.5 | 15.0 | 12.0 | 5.0 | 4.0 | 4.5 | 6.5 | 6.5 | 6.5 | 11.0 | 13.5 |
| 19 | 16.0 | 17.0 | 16.0 | 13.0 | 6.0 | 9.0 | 4.0 | 4.0 | 4.0 | 7.5 | 6.5 | 7.5 |
| 20 | 16.5 | 16.5 | 13.0 | 9.5 | 5.0 | 4.0 | 10.5 | 9.5 | 12.0 | 12.0 | 12.0 | 12.0 |
| 21 | 13.0 | 12.0 | 15.0 | 10.5 | 6.5 | 4.0 | 8.0 | 11.0 | 13.5 | 17.5 | 16.0 | 16.0 |
| 22 | 18.0 | 17.0 | 13.0 | 15.0 | 9.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.0 | 11.0 | 11.0 |
| 23 | 11.0 | 11.0 | 16.0 | 16.0 | 13.5 | 11.0 | 4.5 | 1.0 | 0.0 | 0.0 | 5.0 | 8.0 |
| 24 | 8.0 | 6.0 | 6.5 | 6.0 | 5.0 | 4.0 | 4.0 | 5.0 | 4.0 | 5.0 | 5.0 | 9.0 |
| 25 | 7.5 | 16.0 | 13.5 | 15.0 | 15.0 | 13.5 | 13.5 | 13.5 | 21.0 | 16.0 | 17.0 | 17.0 |
| 26 | 19.0 | 22.5 | 20.0 | 22.0 | 17.5 | 12.0 | 13.0 | 11.0 | 13.5 | 11.0 | 15.0 | 10.5 |
| 27 | 12.0 | 15.0 | 13.0 | 11.0 | 8.0 | 5.0 | 6.5 | 6.0 | 6.0 | 7.5 | 9.0 | 9.5 |
| 28 | 7.5 | 7.5 | 6.5 | 7.5 | 4.0 | 1.0 | 1.0 | 1.0 | 0.0 | 2.0 | 6.0 | 11.0 |
| 29 | 12.0 | 12.0 | 13.5 | 12.0 | 6.5 | 5.0 | 5.0 | 3.0 | 1.0 | 1.0 | 9.5 | 12.0 |
| 30 | 10.5 | 10.5 | 9.0 | 10.5 | 8.0 | 8.0 | 4.0 | 3.0 | 3.0 | 1.0 | 6.0 | 5.0 |
| Sum of 29 days | 339.0 | 388.5 | 385.0 | 350.0 | 254.5 | 209.0 | 194.5 | 194.0 | 174.0 | 209.5 | 269.0 | 302.0 |
| Mean | 11.3 | 12.9 | 12.8 | 11.7 | 8.5 | 7.0 | 6.5 | 6.5 | 5.8 | 7.0 | 9.0 | 10.1 |
| Relative Velocity | 1.24 | 1.42 | 1.41 | 1.29 | 0.94 | 0.77 | 0.72 | 0.72 | 0.64 | 0.77 | 0.99 | 1.11 |

April 3. The reading under 0—2, is the distance travelled between 22—2.

ANEMOGRAPH. DIRECTION.

MAY, 1857.

| HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | | |
|---------------------------|------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 1.5 | 2.0 | 15.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 1.0 | | | |
| 2 | 1.5 | 1.5 | 1.0 | 2.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.5 | | | |
| 3 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 0.5 | 0.0 | 1.5 | 1.5 | 1.5 | | | |
| 4 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 6 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | | | |
| 7 | 2.0 | 2.0 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 | 2.0 | | | |
| 8 | 2.0 | 2.0 | 2.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 1.0 | 2.0 | 2.0 | 3.0 | | | |
| 9 | 3.0 | 3.0 | 2.5 | 3.0 | 3.5 | 3.5 | 2.0 | 2.0 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 10 | 2.0 | 2.0 | 2.0 | 2.0 | 1.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | |
| 11 | 1.0 | 1.0 | 1.0 | 0.0 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 6.5 | 7.0 | 7.0 | | | |
| 12 | 7.5 | 7.5 | 7.5 | 7.0 | 10.0 | 7.0 | 9.5 | 8.0 | 7.0 | 8.5 | 7.0 | 10.0 | | | |
| 13 | 6.0 | 3.0 | 2.5 | 2.5 | 4.5 | 5.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 14 | 3.0 | 3.5 | 3.5 | 4.0 | 5.0 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 1.5 | | | |
| 15 | 15.0 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | | |
| 16 | 14.0 | 11.0 | 11.0 | 11.0 | 10.5 | 10.5 | 11.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 17 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 9.5 | 9.5 | 11.0 | 10.5 | | | |
| 18 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 10.5 | 10.5 | 10.0 | 10.5 | 10.5 | 10.5 | | | |
| 19 | 10.5 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 20 | 11.0 | 11.0 | 11.0 | 10.0 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| 21 | 10.0 | 11.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 22 | 10.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 0.5 | 0.0 | 1.0 | 1.5 | 2.0 | | | |
| 23 | 2.5 | 3.5 | 3.0 | 3.0 | 3.0 | 5.5 | 5.0 | 7.0 | 7.0 | 10.5 | 10.5 | 10.5 | | | |
| 24 | 11.0 | 11.0 | 11.0 | 11.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 3.5 | 3.5 | 3.5 | | | |
| 25 | 3.5 | 3.0 | 3.0 | 3.5 | 3.0 | 6.5 | 9.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 26 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 7.0 | 7.0 | | | |
| 27 | 7.0 | 7.0 | 11.0 | 10.0 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 2.0 | 1.5 | | | |
| 28 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 29 | 1.5 | 1.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 0.5 | 1.0 | 1.0 | 1.0 | | | |
| 30 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | | | |
| 31 | 2.0 | 3.0 | 3.0 | 3.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 1.5 | 3.0 | 3.0 | | | |
| Meandirection. | { 43° | 42° | 46° | 47° | 58° | 80° | 59° | 52° | 53° | 64° | 60° | 55° | | | |
| Intensity. | { .31 | .32 | .28 | .27 | .25 | .24 | .18 | .16 | .16 | .20 | .26 | .32 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

ANEMOGRAPH. VELOCITY.

MAY, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|-------------------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 9.0 | 7.5 | 11.0 | 6.0 | 4.0 | 1.0 | 0.0 | 1.0 | 0.0 | 1.0 | 4.5 | 7.5 |
| 2 | 8.0 | 13.0 | 14.5 | 10.5 | 10.5 | 2.0 | 0.0 | 0.0 | 1.0 | 4.0 | 11.0 | 13.0 |
| 3 | 17.5 | 24.0 | 22.0 | 25.0 | 16.0 | 17.0 | 8.0 | 7.5 | 7.5 | 8.0 | 22.0 | 17.0 |
| 4 | 23.0 | 20.0 | 18.0 | 20.0 | 13.0 | 9.0 | 0.0 | 4.0 | 2.0 | 4.0 | 8.0 | 11.0 |
| 5 | 13.0 | 16.0 | 10.5 | 13.5 | 6.5 | 6.0 | 4.5 | 2.0 | 1.0 | 0.0 | 6.5 | 13.0 |
| 6 | 16.0 | 16.0 | 16.0 | 16.0 | 13.0 | 9.0 | 4.0 | 4.0 | 0.0 | 2.0 | 11.0 | 20.0 |
| 7 | 17.0 | 16.0 | 16.5 | 16.0 | 13.5 | 12.0 | 4.5 | 6.0 | 8.0 | 13.5 | 15.0 | 21.0 |
| 8 | 16.0 | 16.0 | 16.0 | 16.5 | 16.5 | 12.0 | 5.0 | 6.0 | 5.0 | 11.0 | 10.5 | 12.0 |
| 9 | 17.0 | 13.5 | 13.0 | 13.5 | 12.0 | 6.5 | 1.0 | 5.0 | 8.0 | 13.5 | 15.0 | 22.0 |
| 10 | 14.5 | 16.0 | 12.0 | 15.0 | 16.0 | 10.5 | 6.0 | 6.5 | 10.5 | 9.5 | 8.0 | 15.0 |
| 11 | 13.0 | 9.5 | 12.0 | 9.0 | 6.5 | 3.0 | 0.0 | 2.0 | 1.0 | 2.0 | 6.5 | 7.5 |
| 12 | 9.0 | 11.0 | 9.0 | 8.0 | 6.5 | 6.0 | 4.0 | 4.5 | 6.5 | 6.5 | 5.0 | 6.5 |
| 13 | 6.0 | 6.0 | 9.0 | 6.5 | 4.5 | 7.5 | 6.5 | 6.5 | 4.5 | 5.0 | 6.5 | 7.5 |
| 14 | 8.0 | 10.5 | 12.0 | 12.5 | 4.0 | 3.0 | 1.0 | 1.0 | 1.0 | 2.0 | 4.0 | 6.0 |
| 15 | 4.0 | 5.0 | 6.0 | 6.5 | 3.0 | 4.0 | 3.0 | 1.0 | 1.0 | 2.0 | 4.5 | 4.5 |
| 16 | 2.0 | 8.0 | 10.5 | 17.0 | 8.0 | 9.0 | 9.0 | 9.5 | 8.0 | 8.0 | 9.0 | 13.0 |
| 17 | 15.0 | 11.0 | 13.5 | 13.5 | 9.5 | 9.0 | 6.0 | 4.5 | 8.0 | 6.5 | 6.0 | 9.5 |
| 18 | 13.0 | 16.5 | 20.0 | 19.0 | 16.0 | 17.5 | 17.5 | 9.5 | 12.0 | 11.0 | 13.5 | 17.5 |
| 19 | 18.0 | 19.0 | 18.0 | 9.0 | 6.5 | 11.0 | 5.0 | 9.5 | 9.5 | 8.0 | 9.0 | 8.0 |
| 20 | 10.5 | 10.5 | 15.0 | 12.0 | 6.5 | 4.0 | 3.0 | 4.5 | 3.0 | 6.0 | 6.5 | 10.5 |
| 21 | 13.0 | 12.0 | 12.0 | 13.0 | 9.0 | 4.5 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 2.0 |
| 22 | 3.0 | 5.0 | 4.0 | 5.0 | 3.0 | 3.0 | 2.0 | 3.0 | 5.5 | 6.0 | 10.5 | 16.0 |
| 23 | 14.5 | 13.5 | 4.5 | 9.0 | 9.0 | 6.0 | 2.0 | 2.0 | 4.5 | 10.5 | 13.5 | 14.5 |
| 24 | 18.0 | 14.5 | 11.0 | 9.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 7.5 | 8.0 |
| 25 | 10.5 | 12.0 | 16.5 | 18.0 | 8.0 | 4.5 | 3.0 | 4.0 | 4.0 | 2.0 | 9.5 | 9.5 |
| 26 | 9.5 | 10.5 | 9.0 | 13.0 | 8.0 | 3.0 | 4.5 | 5.0 | 4.5 | 4.0 | 10.5 | 9.5 |
| 27 | 10.5 | 9.5 | 8.0 | 7.5 | 2.0 | 1.0 | 1.0 | 1.0 | 0.0 | 1.0 | 5.0 | 9.0 |
| 28 | 14.5 | 13.5 | 12.0 | 16.0 | 13.0 | 11.0 | 10.5 | 11.0 | 13.0 | 11.0 | 10.5 | 13.0 |
| 29 | 12.0 | 11.0 | 8.0 | 6.0 | 1.0 | 6.5 | 9.5 | 5.0 | 6.5 | 6.0 | 9.0 | 10.5 |
| 30 | 11.0 | 13.0 | 12.0 | 9.0 | 5.0 | 2.0 | 5.0 | 8.0 | 8.0 | 9.0 | 13.0 | 10.5 |
| 31 | 16.0 | 13.0 | 13.0 | 13.0 | 6.0 | 4.0 | 2.0 | 2.0 | 2.0 | 4.5 | 6.5 | 8.0 |
| Sum | 382.0 | 392.5 | 384.5 | 384.0 | 260.5 | 204.5 | 127.5 | 136.5 | 146.5 | 181.5 | 278.5 | 352.5 |
| Mean | 12.3 | 12.7 | 12.4 | 12.4 | 8.4 | 6.6 | 4.1 | 4.4 | 4.7 | 5.9 | 9.0 | 11.4 |
| Relative Velocity | 1.42 | 1.46 | 1.43 | 1.43 | 0.97 | 0.76 | 0.48 | 0.50 | 0.54 | 0.68 | 1.04 | 1.31 |

ANEMOGRAPH. DIRECTION.

JUNE, 1857.

HOURS RECKONED FROM NOON.

| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
|---------------------|------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 3.0 | 3.0 | 3.0 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 7.0 | 7.5 | | | |
| 2 | 7.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 10.0 | 10.0 | | | |
| 3 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.5 | 10.0 | 11.0 | 11.0 | | | |
| 4 | 11.0 | 11.0 | 11.0 | 11.0 | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 5 | 15.0 | 14.5 | 10.0 | 8.5 | 8.5 | 8.5 | 8.5 | 9.5 | 10.5 | 10.5 | 15.0 | 15.0 | | | |
| 6 | 15.0 | 14.5 | 14.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 3.5 | 3.5 | 3.5 | | | |
| 7 | 6.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 8 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 9 | 10.5 | 10.0 | 10.0 | 10.0 | 9.5 | 10.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 10 | 10.5 | 10.5 | 10.5 | 10.5 | 13.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| 11 | 11.0 | 12.0 | 13.0 | 14.0 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 0.5 | 0.5 | | | |
| 12 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 7.0 | 7.0 | | | |
| 13 | 3.0 | 7.0 | 6.5 | 6.5 | 6.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 3.5 | 3.5 | | | |
| 14 | 3.0 | 3.5 | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 15 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 16 | 1.5 | 2.5 | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 15.5 | 0.0 | 0.0 | | | |
| 17 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 18 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 19 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.0 | 6.0 | | | |
| 20 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 21 | 10.5 | 11.0 | 15.0 | 15.5 | 12.0 | 12.0 | 13.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | | | |
| 22 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | | | |
| 23 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 24 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | | |
| 25 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 26 | 3.5 | 3.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 27 | 2.5 | 9.5 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 7.0 | 7.0 | 7.0 | | | |
| 28 | 7.0 | 8.0 | 10.5 | 10.5 | 10.5 | 8.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 10.5 | | | |
| 29 | 11.0 | 11.0 | 11.0 | 11.0 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 30 | 7.0 | 11.5 | 11.0 | 12.5 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 15.5 | 15.5 | | | |
| Mean di- rection | 48° | 111° | 5° | 40° | 75° | 81° | 60° | 56° | 37° | 61° | 51° | 78° | | | |
| Inten- sity | .26 | .03 | .01 | .07 | .12 | .15 | .15 | .16 | .12 | .12 | .12 | .09 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

ANEMOGRAPH. VELOCITY.

JUNE, 1857.

HOURS RECKONED FROM NOON.

| Day. | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | ..... | (19.0) | (6.0) | (9.0) | (4.5) | (5.0) | (2.0) | (3.0) | (4.0) | (3.0) | (5.0) | (9.0) |
| 2 | 9.0 | 8.0 | 5.0 | 6.0 | 3.0 | 6.0 | 3.0 | 3.0 | 2.0 | 4.5 | 6.0 | 11.0 |
| 3 | 18.0 | 19.0 | 14.5 | 10.5 | 5.0 | 5.0 | 7.5 | 6.5 | 7.5 | 5.0 | 8.0 | 10.5 |
| 4 | 12.0 | 9.5 | 14.5 | 6.0 | 5.0 | 4.5 | 6.5 | 6.5 | 2.0 | 6.5 | 7.5 | 13.0 |
| 5 | 16.0 | 16.0 | 13.0 | 6.5 | 2.0 | 2.0 | 1.0 | 1.0 | 2.0 | 0.0 | 4.5 | 8.0 |
| 6 | 8.0 | 6.0 | 4.0 | 4.5 | 4.0 | 4.0 | 2.0 | 2.0 | 3.0 | 4.5 | 4.5 | 5.0 |
| 7 | 3.0 | 7.5 | 8.0 | 12.0 | 9.0 | 10.5 | 16.0 | 17.5 | 17.5 | 18.0 | 23.0 | 29.5 |
| 8 | 23.0 | 23.0 | 16.0 | 29.5 | 29.0 | 16.5 | 17.5 | 10.5 | 16.0 | 16.0 | 21.0 | 18.0 |
| 9 | 16.5 | 17.0 | 13.5 | 12.0 | 8.0 | 7.5 | 9.0 | 13.5 | 12.0 | 9.0 | 13.0 | 14.5 |
| 10 | 11.0 | 14.5 | 21.0 | 18.0 | 9.5 | 6.5 | 9.5 | 10.5 | 7.5 | 12.0 | 16.5 | 23.0 |
| 11 | 17.0 | 17.5 | 15.0 | 9.0 | 9.5 | 3.0 | 0.0 | 0.0 | 1.0 | 4.5 | 4.5 | 4.0 |
| 12 | 4.5 | 7.5 | 6.5 | 6.5 | 3.0 | 0.0 | 2.0 | 0.0 | 0.0 | 1.0 | 4.0 | 6.5 |
| 13 | 5.0 | 5.0 | 6.0 | 5.0 | 4.0 | 3.0 | 1.0 | 1.0 | 1.0 | 2.0 | 6.0 | 7.5 |
| 14 | 11.0 | 13.0 | 15.0 | 16.0 | 10.5 | 7.5 | 1.0 | 1.0 | 4.0 | 4.5 | 16.5 | 20.0 |
| 15 | 23.0 | 22.0 | 19.0 | 17.5 | 11.0 | 9.0 | 10.5 | 7.5 | 6.0 | 10.5 | 16.5 | 21.0 |
| 16 | 19.0 | 17.0 | 13.0 | 9.5 | 10.5 | 13.5 | 13.5 | 16.0 | 10.5 | 10.5 | 12.0 | 19.0 |
| 17 | 19.0 | 19.0 | 18.0 | 17.0 | 13.5 | 9.5 | 8.0 | 8.0 | 11.0 | 14.5 | 16.5 | 16.5 |
| 18 | 20.0 | 19.0 | 21.0 | 22.5 | 18.0 | 17.0 | 14.5 | 17.0 | 17.5 | 15.0 | 16.5 | 24.0 |
| 19 | 19.0 | 23.0 | 24.0 | 16.0 | 9.0 | 10.5 | 6.5 | 6.0 | 6.0 | 4.5 | 5.0 | 4.5 |
| 20 | 6.0 | 5.0 | 5.0 | 2.0 | 2.0 | 3.0 | 3.0 | 1.0 | 4.5 | 2.0 | 3.0 | 9.0 |
| 21 | 6.5 | 9.5 | 5.0 | 3.0 | 4.0 | 0.0 | 2.0 | 4.5 | 4.5 | 4.0 | 5.0 | 4.5 |
| 22 | 3.0 | 4.5 | 4.0 | 3.0 | 2.0 | 1.0 | 0.0 | 0.0 | 3.0 | 2.0 | 3.0 | 5.0 |
| 23 | 4.5 | 6.5 | 6.0 | 5.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 2.0 | 4.5 | 6.0 |
| 24 | 6.0 | 8.0 | 7.5 | 7.5 | 3.0 | 1.0 | 0.0 | 0.0 | 1.0 | 2.0 | 5.0 | 9.5 |
| 25 | 9.0 | 9.0 | 8.0 | 6.0 | 2.0 | 1.0 | 0.0 | 0.0 | 0.0 | 1.0 | 2.0 | 3.0 |
| 26 | 4.0 | 5.0 | 3.0 | 6.5 | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 4.5 |
| 27 | 6.0 | 3.0 | 6.5 | 3.0 | 2.0 | 4.5 | 2.0 | 1.0 | 3.0 | 2.0 | 4.0 | 4.5 |
| 28 | 6.5 | 6.5 | 11.0 | 14.5 | 9.0 | 4.0 | 4.5 | 5.0 | 6.5 | 7.5 | 9.5 | 9.0 |
| 29 | 13.0 | 13.0 | 16.5 | 12.0 | 6.0 | 8.0 | 7.5 | 6.5 | 5.0 | 8.0 | 10.5 | 9.0 |
| 30 | 10.5 | 6.5 | 6.0 | 6.5 | 2.0 | 3.0 | 0.0 | 1.0 | 2.0 | 1.0 | 5.0 | 12.0 |
| Sum of 29 days | 329.0 | 340.0 | 325.5 | 293.0 | 199.5 | 163.0 | 150.0 | 148.5 | 157.0 | 175.0 | 255.0 | 331.5 |
| Mean | 11.3 | 11.8 | 11.2 | 10.1 | 6.9 | 5.6 | 5.2 | 5.1 | 5.4 | 6.1 | 8.8 | 11.4 |
| Relative Velocity | 1.38 | 1.44 | 1.37 | 1.23 | 0.84 | 0.68 | 0.64 | 0.62 | 0.66 | 0.74 | 1.07 | 1.39 |

June 1. 0^h—2^h. This reading includes the velocity from 22—2.

ANEMOGRAPH. VELOCITY.

JULY, 1857.

HOURS RECKONED FROM NOON.

| Day. | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 10.5 | 16.0 | 19.0 | 20.0 | 15.0 | 8.0 | 9.0 | 6.0 | 6.0 | 9.5 | 9.0 | 7.5 |
| 2 | 7.5 | 6.0 | 5.0 | 3.0 | 1.0 | 4.0 | 4.0 | 1.0 | 3.0 | 3.0 | 6.0 | 8.0 |
| 3 | 8.0 | 8.0 | 7.5 | 9.0 | 8.0 | 11.0 | 9.0 | 14.5 | 12.0 | 6.0 | 8.0 | 9.0 |
| 4 | 13.5 | 13.5 | 9.0 | 6.5 | 6.5 | 7.5 | 4.5 | 4.0 | 2.0 | 4.5 | 6.0 | 6.5 |
| 5 | 8.0 | 8.0 | 8.0 | 11.0 | 6.0 | 4.5 | 1.0 | 5.0 | 9.0 | 9.5 | 9.0 | 16.0 |
| 6 | 18.0 | 21.0 | 23.0 | 10.5 | 7.5 | 13.0 | 8.0 | 6.5 | 6.0 | 12.0 | 11.0 | 13.5 |
| 7 | 13.5 | 10.5 | 12.0 | 10.5 | 8.0 | 9.5 | 6.0 | 8.0 | 7.5 | 8.0 | 12.0 | 11.0 |
| 8 | 9.0 | 9.5 | 8.0 | 12.0 | 16.0 | 8.0 | 6.0 | 9.5 | 7.5 | 8.0 | 13.0 | 10.5 |
| 9 | 10.5 | 13.5 | 12.0 | 12.0 | 6.5 | 3.0 | 4.0 | 6.5 | 4.5 | 5.0 | 10.5 | 13.0 |
| 10 | 15.0 | 16.5 | 17.5 | 14.5 | 9.5 | 5.0 | 6.5 | 9.0 | 10.5 | 14.5 | 16.0 | 16.0 |
| 11 | 14.5 | 14.5 | 15.0 | 14.5 | 13.5 | 11.0 | 2.0 | 11.0 | 11.0 | 5.0 | 10.5 | 12.0 |
| 12 | 12.0 | 16.5 | 17.0 | 16.0 | 8.0 | 6.0 | 2.0 | 0.0 | 2.0 | 4.0 | 9.0 | 13.0 |
| 13 | 12.0 | 17.5 | 17.0 | 13.0 | 5.0 | 2.0 | 2.0 | 1.0 | 2.0 | 1.0 | 3.0 | 6.0 |
| 14 | 5.0 | 4.5 | 4.5 | 6.5 | 3.0 | 4.5 | 1.0 | 2.0 | 2.0 | 1.0 | 4.0 | 5.0 |
| 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 17 | 4.5 | 12.0 | 14.5 | 17.0 | 14.5 | 11.0 | 8.0 | 9.0 | 9.5 | 6.5 | 9.5 | 12.0 |
| 18 | 11.0 | 14.5 | 13.0 | 13.0 | 13.5 | 7.5 | 6.5 | 4.0 | 4.5 | 4.0 | 4.0 | 7.5 |
| 19 | 8.0 | 9.0 | 7.5 | 7.5 | 8.0 | 5.0 | 3.0 | 4.5 | 3.0 | 11.0 | 14.5 | 13.0 |
| 20 | 11.0 | 16.5 | 20.0 | 22.5 | 18.0 | 13.0 | 6.0 | 10.5 | 12.0 | 10.5 | 13.5 | 10.5 |
| 21 | 21.0 | 20.0 | 23.0 | 18.0 | 22.0 | 15.0 | 13.5 | 17.5 | 19.0 | 19.0 | 19.0 | 16.5 |
| 22 | 17.0 | 16.0 | 16.0 | 14.5 | 9.5 | 4.0 | 3.0 | 4.5 | 7.5 | 10.5 | 14.5 | 14.5 |
| 23 | 16.0 | 17.5 | 21.0 | 22.0 | 22.0 | 9.5 | 9.0 | 7.5 | 8.0 | 9.0 | 12.0 | 22.5 |
| 24 | 25.0 | 22.5 | 22.0 | 17.0 | 11.0 | 5.0 | 13.5 | 8.0 | 14.5 | 13.0 | 16.5 | 18.0 |
| 25 | 23.0 | 26.0 | 25.5 | 26.0 | 16.5 | 8.0 | 6.5 | 1.0 | 3.0 | 4.0 | 6.0 | 9.5 |
| 26 | 18.0 | 22.0 | 21.0 | 19.0 | 12.0 | 3.0 | 5.0 | 5.0 | 5.0 | 7.5 | 11.0 | 13.0 |
| 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 29 | 4.5 | 5.0 | 5.0 | 2.0 | 1.0 | 3.0 | 4.0 | 6.5 | 8.0 | 6.0 | 8.0 | 13.0 |
| 30 | (14.5) | (14.5) | (20.0) | (16.0) | ..... | (35.0) | (12.0) | (14.5) | (13.5) | (12.0) | (16.0) | (19.0) |
| 31 | 21.0 | 25.0 | 28.5 | 23.0 | 13.0 | 9.0 | 6.5 | 11.0 | 10.5 | 4.5 | 5.0 | 7.5 |
| Sum of 26 days | 337.0 | 331.5 | 391.5 | 360.5 | 274.5 | 190.0 | 149.5 | 173.0 | 189.5 | 196.5 | 260.5 | 304.5 |
| Mean | 12.9 | 14.7 | 15.1 | 13.9 | 10.6 | 7.3 | 5.8 | 6.7 | 7.3 | 7.6 | 10.0 | 11.7 |
| Relative Velocity | 1.25 | 1.43 | 1.47 | 1.35 | 1.03 | 0.71 | 0.56 | 0.69 | 0.71 | 0.74 | 0.97 | 1.14 |

[July 30. 8^h—10^h. This reading includes the velocity from 6—10.

ANEMOGRAPH. DIRECTION.

AUGUST, 1857.

| HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | | |
|---------------------------|------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.5 | 10.5 | 10.5 | 10.5 | 11.0 | 11.0 | | | |
| 2 | 11.0 | 11.0 | 11.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.0 | 9.0 | 9.0 | 8.0 | | | |
| 3 | 7.0 | 7.0 | 7.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.5 | 10.5 | | | |
| 4 | 11.0 | 11.0 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 14.0 | | | |
| 5 | 12.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 15.5 | 0.5 | 1.0 | 2.0 | 1.0 | | | |
| 6 | 11.5 | 14.0 | 15.5 | 15.5 | 15.0 | 13.0 | 12.5 | 12.5 | 12.5 | 12.5 | 14.0 | 14.0 | | | |
| 7 | 14.0 | 12.0 | 12.0 | 11.5 | 11.0 | 13.0 | 13.0 | 13.0 | 11.5 | 11.5 | 12.0 | 12.0 | | | |
| 8 | 11.0 | 10.5 | 11.0 | 11.0 | 11.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | | | |
| 9 | 12.0 | 15.0 | 14.5 | 11.0 | 13.5 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | | | |
| 10 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 10.5 | 10.0 | 9.0 | 9.0 | 10.0 | 11.0 | | | |
| 11 | 11.5 | 11.0 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 11.0 | 12.0 | 12.0 | 12.0 | | | |
| 12 | 8.5 | 10.0 | 6.5 | 6.5 | 6.5 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 7.0 | 7.0 | | | |
| 13 | 7.0 | 7.0 | 7.0 | 7.0 | 13.5 | 0.5 | 0.5 | 0.5 | 14.0 | 14.5 | 14.0 | 0.0 | | | |
| 14 | 14.5 | 14.0 | 14.0 | 13.5 | 13.0 | 12.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| 15 | 11.0 | 15.5 | 15.5 | 15.5 | 0.5 | 1.0 | 1.0 | 14.5 | 12.0 | 15.5 | 0.0 | 0.0 | | | |
| 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |  |
| 17 | ..... | ..... | ..... | (0.5) | (0.5) | (0.5) | (0.5) | (0.5) | (0.5) | (0.5) | (0.5) | (14.0) | | | |
| 18 | 14.0 | 14.0 | 14.0 | 15.0 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | | | |
| 19 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 0.5 | 0.5 | 1.0 | | | |
| 20 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.5 | 1.5 | 1.0 | 1.5 | 1.5 | 1.0 | 1.5 | | | |
| 21 | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 | | | |
| 22 | 3.0 | 1.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 2.5 | 2.5 | 2.5 | | | |
| 23 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.5 | | | |
| 24 | 3.5 | 3.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 10.0 | | | |
| 25 | 10.5 | 10.5 | 9.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 26 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 15.0 | | | |
| 27 | 15.5 | 13.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 1.5 | | | |
| 28 | 1.0 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 29 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 3.0 | | | |
| 30 | 3.0 | 5.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| 31 | 3.0 | 3.0 | 6.5 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 12.5 | | | |
| Mean of 29 days | { 278° | 293° | 287° | 283° | 277° | 283° | 279° | 288° | 277° | 287° | 288° | 318° | | | |
| Intensity | { .31 | .17 | .17 | .18 | .21 | .26 | .22 | .23 | .23 | .22 | .23 | .24 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

ANEMOGRAPHIC VELOCITY.

AUGUST, 1857.

HOURS RECKONED FROM NOON.

| Day. | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 11.0 | 14.5 | 15.0 | 10.5 | 9.0 | 5.0 | 10.5 | 4.0 | 1.0 | 2.0 | 8.0 | 16.5 |
| 2 | 8.0 | 8.0 | 6.5 | 6.0 | 3.0 | 3.0 | 3.0 | 2.0 | 4.5 | 2.0 | 4.5 | 6.0 |
| 3 | 6.0 | 11.0 | 11.0 | 7.5 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 1.0 | 5.0 | 13.0 |
| 4 | 13.5 | 13.5 | 13.0 | 6.5 | 4.5 | 4.5 | 6.0 | 4.5 | 3.0 | 2.0 | 2.0 | 3.0 |
| 5 | 6.0 | 9.0 | 9.0 | 9.0 | 4.0 | 2.0 | 3.0 | 4.0 | 4.0 | 5.0 | 6.0 | 9.0 |
| 6 | 4.0 | 6.0 | 11.0 | 10.5 | 8.0 | 7.5 | 6.0 | 3.0 | 4.5 | 3.0 | 4.0 | 2.0 |
| 7 | 6.5 | 6.5 | 10.5 | 8.0 | 8.0 | 6.0 | 6.5 | 6.0 | 5.0 | 9.0 | 6.5 | 9.0 |
| 8 | 10.5 | 12.0 | 8.0 | 8.0 | 9.5 | 8.0 | 7.5 | 6.0 | 4.0 | 3.0 | 4.5 | 5.0 |
| 9 | 6.5 | 6.5 | 5.0 | 5.0 | 5.0 | 3.0 | 4.0 | 0.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| 10 | 4.0 | 5.0 | 8.0 | 6.0 | 1.0 | 2.0 | 4.0 | 2.0 | 4.0 | 1.0 | 6.0 | 9.5 |
| 11 | 8.0 | 13.0 | 11.0 | 6.0 | 3.0 | 4.0 | 1.0 | 0.0 | 4.0 | 3.0 | 2.0 | 3.0 |
| 12 | 3.0 | 1.0 | 4.0 | 4.0 | 4.0 | 4.0 | 0.0 | 0.0 | 1.0 | 1.0 | 3.0 | 7.5 |
| 13 | 11.0 | 11.0 | 11.0 | 6.5 | 6.0 | 5.0 | 4.5 | 2.0 | 4.5 | 4.5 | 4.5 | 9.0 |
| 14 | 4.5 | 9.0 | 6.5 | 13.5 | 13.0 | 9.0 | 9.0 | 5.0 | 4.5 | 3.0 | 4.0 | 2.0 |
| 15 | 3.0 | 4.5 | 3.0 | 3.0 | 4.0 | 2.0 | 2.0 | 3.0 | 6.0 | 12.0 | 14.5 | 16.5 |
| 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 17 | ..... | ..... | ..... | ..... | (4.5) | (0.0) | (0.0) | (0.0) | (0.0) | (0.0) | (1.0) | (7.5) |
| 18 | 6.5 | 6.5 | 6.0 | 7.5 | 7.5 | 4.0 | 1.0 | 1.0 | 0.0 | 1.0 | 6.0 | 8.0 |
| 19 | 8.0 | 10.5 | 9.5 | 7.5 | 3.0 | 2.0 | 0.0 | 2.0 | 14.5 | 8.0 | 9.5 | 16.0 |
| 20 | 19.0 | 16.0 | 19.0 | 22.0 | 11.0 | 7.5 | 13.0 | 18.0 | 12.0 | 12.0 | 10.5 | 10.5 |
| 21 | 12.0 | 13.0 | 12.0 | 13.0 | 9.5 | 9.0 | 5.0 | 4.0 | 2.0 | 4.0 | 8.0 | 9.0 |
| 22 | 10.5 | 9.0 | 9.5 | 9.0 | 3.0 | 1.0 | 2.0 | 1.0 | 2.0 | 4.0 | 4.5 | 8.0 |
| 23 | 12.0 | 11.0 | 13.0 | 12.0 | 6.0 | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 4.0 |
| 24 | 3.0 | 7.5 | 6.0 | 6.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 4.5 | 5.0 |
| 25 | 9.0 | 9.5 | 8.0 | 8.0 | 9.5 | 3.0 | 3.0 | 3.0 | 2.0 | 1.0 | 4.0 | 3.0 |
| 26 | 4.0 | 5.0 | 5.0 | 4.5 | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 3.0 | 5.0 |
| 27 | 7.5 | 5.0 | 5.0 | 4.5 | 5.0 | 3.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| 28 | 12.0 | 12.0 | 11.0 | 9.5 | 6.5 | 8.0 | 8.0 | 5.0 | 6.5 | 5.0 | 8.0 | 10.5 |
| 29 | 13.0 | 15.0 | 14.5 | 11.0 | 10.5 | 8.0 | 5.0 | 5.0 | 3.0 | 3.0 | 6.5 | 9.0 |
| 30 | 9.5 | 7.5 | 6.0 | 3.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 3.0 |
| 31 | 5.0 | 3.0 | 4.5 | 6.5 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 | 0.0 | 3.0 | 6.0 |
| Sum of 29 days | 236.5 | 261.0 | 261.5 | 234.0 | 163.5 | 119.5 | 111.0 | 88.5 | 100.0 | 95.5 | 149.0 | 211.0 |
| Mean | 8.2 | 9.0 | 9.0 | 8.1 | 5.6 | 4.1 | 3.8 | 3.0 | 3.5 | 3.3 | 5.1 | 7.3 |
| Relative Velocity | 1.44 | 1.58 | 1.58 | 1.42 | 0.98 | 0.72 | 0.67 | 0.53 | 0.62 | 0.58 | 0.90 | 1.28 |

ANEMOGRAPH. DIRECTION.

SEPTEMBER, 1857.

| HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | | |
|---------------------------|------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 12.5 | 13.0 | 12.5 | 12.0 | 11.0 | 11.0 | 11.0 | 11.0 | 10.5 | 11.0 | 11.0 | 14.0 | | | |
| 2 | 13.0 | 13.0 | 13.5 | 10.5 | 13.5 | 13.5 | 13.0 | 12.0 | 11.0 | 7.5 | 6.0 | 4.0 | | | |
| 3 | 2.5 | 3.5 | 6.5 | 6.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 4 | 9.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 5 | 10.5 | 11.0 | 10.5 | 10.5 | 9.0 | 9.0 | 9.0 | 9.0 | 8.5 | 8.0 | 7.5 | 10.5 | | | |
| 6 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| 7 | 11.0 | 11.0 | 11.5 | 8.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 5.5 | 8.0 | 7.5 | | | |
| 8 | 7.5 | 7.5 | 7.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 9.0 | 8.0 | 7.0 | 7.5 | | | |
| 9 | 7.0 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | 9.0 | 10.5 | 10.5 | 10.5 | | | |
| 10 | 10.5 | 10.0 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 14.0 | 13.0 | 12.5 | | | |
| 11 | 11.5 | 11.5 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 8.0 | | | |
| 12 | 8.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 10.5 | | | |
| 13 | 10.5 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 9.0 | 7.0 | | | |
| 14 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 15 | 8.0 | 8.0 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.5 | 10.0 | | | |
| 16 | 9.5 | 10.5 | 9.0 | 9.0 | 9.0 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | | | |
| 17 | 10.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 15.0 | | | |
| 18 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | | | |
| 19 | 15.5 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 1.5 | | | |
| 20 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 21 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 3.0 | | | |
| 22 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 3.5 | | | |
| 23 | 3.0 | 3.0 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 7.0 | 7.0 | | | |
| 24 | 7.5 | 8.0 | 8.0 | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 25 | 10.5 | 13.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | | |
| 26 | 14.0 | 10.0 | 10.0 | 10.0 | 8.0 | 7.5 | 7.5 | 7.0 | 7.5 | 10.5 | 11.0 | 11.0 | | | |
| 27 | 11.0 | 11.0 | 11.0 | 10.0 | 11.0 | 11.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 28 | 11.0 | 11.0 | 12.0 | 12.0 | 12.0 | 12.0 | 11.0 | 10.5 | 10.5 | 10.5 | 10.5 | 9.5 | | | |
| 29 | 10.0 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | | | |
| 30 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| Mean di- rection | { 229° | 226° | 216° | 209° | 206° | 203° | 200° | 198° | 196° | 198° | 197° | 195° | | | |
| Inten- sity | { .38 | .35 | .36 | .38 | .38 | .38 | .39 | .38 | .45 | .36 | .44 | .33 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

ANEMOGRAPH. VELOCITY.

SEPTEMBER, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|-------------------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 8.0 | 9.5 | 7.5 | 8.0 | 8.0 | 9.5 | 9.5 | 9.0 | 14.5 | 17.5 | 15.0 | 4.0 |
| 2 | 8.0 | 13.0 | 12.0 | 7.5 | 8.0 | 16.0 | 7.5 | 6.0 | 7.5 | 4.5 | 7.5 | 7.5 |
| 3 | 10.5 | 7.5 | 5.0 | 5.0 | 4.5 | 2.0 | 1.0 | 1.0 | 1.0 | 2.0 | 4.5 | 4.5 |
| 4 | 3.0 | 6.0 | 9.0 | 4.5 | 1.0 | 2.0 | 1.0 | 3.0 | 3.0 | 1.0 | 2.0 | 3.0 |
| 5 | 9.5 | 4.5 | 6.0 | 5.0 | 2.0 | 4.0 | 3.0 | 2.0 | 7.5 | 6.0 | 6.5 | 4.5 |
| 6 | 13.0 | 11.0 | 11.0 | 6.5 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 | 4.5 | 4.5 | 6.0 |
| 7 | 3.0 | 9.5 | 6.5 | 4.0 | 6.0 | 4.0 | 1.0 | 3.0 | 4.0 | 4.0 | 7.5 | 5.0 |
| 8 | 6.0 | 3.0 | 3.0 | 5.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 7.5 | 7.5 |
| 9 | 8.0 | 5.0 | 8.0 | 8.0 | 4.0 | 5.0 | 4.5 | 9.0 | 9.0 | 5.0 | 4.5 | 11.0 |
| 10 | 9.5 | 9.5 | 5.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 | 6.0 | 6.0 | 4.5 |
| 11 | 10.5 | 9.5 | 12.0 | 11.0 | 8.0 | 7.5 | 6.5 | 5.0 | 1.0 | 2.0 | 6.0 | 5.0 |
| 12 | 6.0 | 5.0 | 9.0 | 5.0 | 4.0 | 1.0 | 0.0 | 1.0 | 1.0 | 3.0 | 4.0 | 5.0 |
| 13 | 5.0 | 9.0 | 7.5 | 3.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | 5.0 |
| 14 | 6.5 | 4.5 | 2.0 | 2.0 | 2.0 | 5.0 | 4.0 | 3.0 | 1.0 | 0.0 | 2.0 | 4.0 |
| 15 | 6.5 | 7.5 | 7.5 | 6.0 | 6.0 | 2.0 | 3.0 | 4.5 | 3.0 | 6.0 | 4.5 | 6.5 |
| 16 | 6.5 | 7.5 | 4.5 | 2.0 | 3.0 | 4.5 | 4.0 | 0.0 | 0.0 | 1.0 | 2.0 | 4.0 |
| 17 | 6.5 | 9.5 | 8.0 | 5.0 | 3.0 | 4.0 | 3.0 | 8.0 | 6.0 | 5.0 | 4.5 | 7.5 |
| 18 | 9.0 | 9.0 | 12.0 | 9.5 | 2.0 | 2.0 | 0.0 | 1.0 | 2.0 | 3.0 | 6.5 | 6.5 |
| 19 | 10.5 | 10.5 | 9.5 | 7.5 | 6.0 | 4.5 | 3.0 | 4.0 | 3.0 | 1.0 | 8.0 | 9.0 |
| 20 | 12.0 | 9.0 | 9.5 | 6.5 | 3.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 3.0 |
| 21 | 6.5 | 9.5 | 10.5 | 8.0 | 5.0 | 4.0 | 6.0 | 6.5 | 8.0 | 6.0 | 7.5 | 13.0 |
| 22 | 16.0 | 10.5 | 9.5 | 6.0 | 5.0 | 5.0 | 4.0 | 6.5 | 6.5 | 5.0 | 8.0 | 10.5 |
| 23 | 13.0 | 10.5 | 10.5 | 9.0 | 5.0 | 3.0 | 1.0 | 1.0 | 0.0 | 2.0 | 4.5 | 12.0 |
| 24 | 9.0 | 8.0 | 8.0 | 6.0 | 9.0 | 6.5 | 4.5 | 4.5 | 1.0 | 3.0 | 4.0 | 4.0 |
| 25 | 6.0 | 9.0 | 5.0 | 4.5 | 1.0 | 1.0 | 2.0 | 1.0 | 2.0 | 6.0 | 6.5 | 5.0 |
| 26 | 9.9 | 9.0 | 8.0 | 5.0 | 6.0 | 9.5 | 8.0 | 9.5 | 9.0 | 8.0 | 8.0 | 11.0 |
| 27 | 14.5 | 12.0 | 12.0 | 9.0 | 9.0 | 3.0 | 5.0 | 1.0 | 4.0 | 4.0 | 4.0 | 5.0 |
| 28 | 8.0 | 6.5 | 9.5 | 2.0 | 5.0 | 5.0 | 9.5 | 4.5 | 3.0 | 0.0 | 2.0 | 4.5 |
| 29 | 6.0 | 6.0 | 5.0 | 3.0 | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 3.0 | 3.0 | 6.0 |
| 30 | 9.0 | 9.5 | 9.0 | 3.0 | 2.0 | 1.0 | 1.0 | 1.0 | 3.0 | 2.0 | 2.0 | 2.0 |
| Sum | 254.5 | 250.0 | 241.5 | 167.5 | 125.5 | 118.0 | 101.0 | 106.0 | 110.0 | 115.5 | 156.5 | 186.0 |
| Mean | 8.5 | 8.3 | 8.1 | 5.6 | 4.2 | 3.9 | 3.4 | 3.5 | 3.7 | 3.8 | 5.2 | 6.2 |
| Relative Velocity | 1.57 | 1.54 | 1.50 | 1.04 | 0.78 | 0.73 | 0.63 | 0.65 | 0.69 | 0.71 | 0.96 | 1.15 |

ANEMOGRAPH. DIRECTION.

OCTOBER, 1857.

| | HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | |
|---------------------|---------------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| Day. | o h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 7.0 | 9.0 | 10.0 | 9.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 11.0 | 11.5 | | | |
| 2 | 10.5 | 10.5 | 10.5 | 10.0 | 10.5 | 10.0 | 10.5 | 10.5 | 11.0 | 11.0 | 10.5 | 10.5 | | | |
| 3 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 11.5 | 15.0 | 15.5 | | | |
| 4 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | 15.5 | | | |
| 5 | 11.0 | 10.0 | 11.5 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.5 | 11.0 | | | |
| 6 | 11.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 8.5 | 4.0 | | | |
| 7 | 6.5 | 6.0 | 3.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.5 | 6.0 | 3.0 | | | |
| 8 | 1.5 | 0.5 | 14.0 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 11.5 | 10.5 | 11.0 | | | |
| 9 | 11.5 | 11.5 | 11.5 | 11.5 | 12.0 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | | | |
| 10 | 12.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 11 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 12 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | | | |
| 13 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | | | |
| 14 | 5.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| 15 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | | | |
| 16 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | 1.5 | 2.5 | 2.5 | 2.5 | | | |
| 17 | 3.5 | 6.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 18 | 5.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 19 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 20 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | | | |
| 21 | 0.5 | 0.5 | 0.5 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 14.5 | 14.5 | 15.0 | | | |
| 22 | 15.0 | 14.0 | 15.0 | 15.5 | 15.5 | 15.5 | 1.0 | 1.0 | 1.0 | 0.5 | 0.5 | 0.0 | | | |
| 23 | 15.5 | 15.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.5 | 2.0 | 2.0 | 3.5 | | | |
| 24 | 2.5 | 2.0 | 2.5 | 3.0 | 3.0 | 3.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | | | |
| 25 | 3.0 | 3.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 26 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 6.5 | | | |
| 27 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | | |
| 28 | 9.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.0 | 8.5 | | | |
| 29 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| 30 | 11.0 | 11.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 11.0 | 11.0 | | | |
| 31 | 10.0 | 10.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 7.5 | | | |
| Mean di- rection | { 225° | 253° | 267° | 237° | 243° | 237° | 238° | 229° | 225° | 223° | 200° | 105° | | | |
| Inten- sity | { .09 | .10 | .09 | .13 | .11 | .13 | .11 | .10 | .10 | .10 | .06 | .10 | | | |
| 0 { N o° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

ANEMOGRAPH. VELOCITY.

OCTOBER, 1857.

HOURS RECKONED FROM NOON.

| Day. | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
|-------------------|------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 3.0 | 4.0 | 5.0 | 5.0 | 10.5 | 11.0 | 11.0 | 8.0 | 6.5 | 7.5 | 13.0 | 9.5 |
| 2 | 10.5 | 9.5 | 17.0 | 16.0 | 14.5 | 6.5 | 13.0 | 15.0 | 17.0 | 15.0 | 11.0 | 14.5 |
| 3 | 17.5 | 18.0 | 11.0 | 6.5 | 9.0 | 9.0 | 7.5 | 7.5 | 4.5 | 3.0 | 10.5 | 8.0 |
| 4 | 8.0 | 6.0 | 6.5 | 4.5 | 1.0 | 1.0 | 1.0 | 2.0 | 4.5 | 4.5 | 1.0 | 4.0 |
| 5 | 16.0 | 16.0 | 15.0 | 4.5 | 5.0 | 2.0 | 4.5 | 6.0 | 4.0 | 9.0 | 10.5 | 14.5 |
| 6 | 17.0 | 15.0 | 14.5 | 4.0 | 2.0 | 2.0 | 1.0 | 1.0 | 3.0 | 4.5 | 6.0 | 10.5 |
| 7 | 12.0 | 9.5 | 12.0 | 16.0 | 16.0 | 16.0 | 17.0 | 13.0 | 11.0 | 13.0 | 12.0 | 16.5 |
| 8 | 18.0 | 9.5 | 11.0 | 12.0 | 10.5 | 11.0 | 8.0 | 9.5 | 7.5 | 11.0 | 13.5 | 22.5 |
| 9 | 19.0 | 17.5 | 22.0 | 17.5 | 14.5 | 15.0 | 14.5 | 16.0 | 14.5 | 10.5 | 11.0 | 18.0 |
| 10 | 13.5 | 10.5 | 9.5 | 10.5 | 9.5 | 3.0 | 3.0 | 6.0 | 8.0 | 6.0 | 0.0 | 2.0 |
| 11 | 1.0 | 4.0 | 1.0 | 1.0 | 3.0 | 5.0 | 4.0 | 0.0 | 2.0 | 3.0 | 3.0 | 4.5 |
| 12 | 5.0 | 6.5 | 8.0 | 2.0 | 3.0 | 5.0 | 5.0 | 3.0 | 4.5 | 2.0 | 3.0 | 4.5 |
| 13 | 4.0 | 2.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 4.0 |
| 14 | 7.5 | 8.0 | 6.5 | 3.0 | 1.0 | 1.0 | 1.0 | 2.0 | 4.5 | 5.0 | 4.0 | 4.5 |
| 15 | 5.0 | 5.0 | 1.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 4.0 |
| 16 | 3.0 | 6.0 | 5.0 | 3.0 | 1.0 | 1.0 | 1.0 | 3.0 | 3.0 | 4.0 | 3.0 | 4.5 |
| 17 | 7.5 | 6.5 | 4.5 | 3.0 | 6.5 | 7.5 | 4.5 | 2.0 | 2.0 | 1.0 | 1.0 | 3.0 |
| 18 | 4.0 | 7.5 | 9.5 | 9.5 | 9.5 | 9.5 | 8.0 | 6.0 | 6.5 | 6.5 | 4.5 | 7.5 |
| 19 | 13.5 | 9.0 | 8.0 | 6.5 | 4.0 | 0.0 | 1.0 | 3.0 | 4.0 | 4.0 | 3.0 | 5.0 |
| 20 | 7.5 | 10.5 | 8.0 | 4.5 | 6.5 | 4.0 | 4.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 21 | 1.0 | 4.0 | 1.0 | 11.0 | 8.0 | 6.5 | 7.5 | 6.5 | 6.5 | 9.0 | 8.0 | 9.0 |
| 22 | 9.5 | 9.0 | 10.5 | 21.0 | 23.0 | 23.0 | 19.0 | 16.0 | 19.0 | 13.5 | 7.5 | 11.0 |
| 23 | 17.5 | 12.0 | 9.5 | 4.5 | 2.0 | 4.5 | 6.0 | 9.0 | 8.0 | 13.5 | 8.0 | 6.5 |
| 24 | 11.0 | 17.0 | 17.0 | 14.5 | 11.0 | 9.5 | 10.5 | 13.0 | 10.5 | 12.0 | 9.0 | 13.0 |
| 25 | 16.0 | 16.0 | 9.0 | 4.5 | 2.0 | 2.0 | 1.0 | 2.0 | 1.0 | 1.0 | 2.0 | 3.0 |
| 26 | 1.0 | 4.0 | 3.0 | 1.0 | 1.0 | 1.0 | 3.0 | 3.0 | 4.0 | 6.0 | 5.0 | 9.0 |
| 27 | 10.5 | 16.0 | 10.5 | 8.0 | 9.0 | 8.0 | 3.0 | 2.0 | 1.0 | 2.0 | 4.0 | 4.5 |
| 28 | 7.5 | 8.0 | 4.0 | 4.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.0 | 4.5 | 9.5 | 10.5 |
| 29 | 8.0 | 8.0 | 8.0 | 7.5 | 6.0 | 3.0 | 4.5 | 9.5 | 10.5 | 9.0 | 12.0 | 13.5 |
| 30 | 17.5 | 22.0 | 17.5 | 13.0 | 8.0 | 8.0 | 5.0 | 4.0 | 2.0 | 1.0 | 1.0 | 4.0 |
| 31 | 4.5 | 9.0 | 6.0 | 8.0 | 8.0 | 6.0 | 4.0 | 5.0 | 4.5 | 6.5 | 6.0 | 8.0 |
| Sum | 296.5 | 305.5 | 272.0 | 228.0 | 209.0 | 186.5 | 178.5 | 180.0 | 182.0 | 191.5 | 187.0 | 254.5 |
| Mean | 9.6 | 9.8 | 8.8 | 7.4 | 6.7 | 6.0 | 5.7 | 5.8 | 5.9 | 6.2 | 6.0 | 8.2 |
| Relative Velocity | } 1.33 1.36 1.22 1.03 0.93 0.83 0.79 0.81 0.82 0.86 0.83 1.14 | | | | | | | | | | | |

ANEMOGRAPH. DIRECTION.

NOVEMBER, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | |
|--------------------|---------------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 7.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | | | |
| 2 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | | | |
| 3 | 7.0 | 7.0 | 7.0 | 7.0 | 1.0 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.5 | 3.0 | | | |
| 4 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| 6 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| 7 | 4.0 | 4.0 | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | |
| 8 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | |
| 9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | |
| 10 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| 11 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 12 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 13 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 14 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | | | |
| 15 | 2.0 | 2.0 | 1.5 | 1.5 | 1.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.5 | 1.5 | | | |
| 16 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| 17 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 18 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 19 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 20 | 2.5 | 2.5 | 15.0 | 15.0 | 13.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | | | |
| 21 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 22 | 10.0 | 10.5 | 11.0 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | 10.0 | 13.0 | 13.0 | | | |
| 23 | 13.0 | 13.0 | 13.0 | 12.5 | 12.5 | 12.5 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | | | |
| 24 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 4.5 | 4.5 | 4.5 | 4.5 | | | |
| 25 | 3.5 | 3.5 | 3.0 | 2.5 | 3.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| 26 | 3.5 | 4.5 | 6.5 | 9.0 | 10.5 | 12.0 | 13.0 | 14.0 | 6.5 | 10.0 | 11.0 | 12.0 | | | |
| 27 | 3.5 | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 28 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | |
| 29 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.5 | 4.0 | | | |
| 30 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | |
| Meandi- rection | 54° | 53° | 47° | 40° | 31° | 30° | 28° | 30° | 53° | 48° | 43° | 28° | | | |
| Inten- sity. | .41 | .42 | .37 | .34 | .37 | .36 | .37 | .38 | .40 | .34 | .36 | .53 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

ANEMOGRAPH. VELOCITY.

NOVEMBER, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|-------------------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 16.5 | 12.0 | 6.0 | 5.0 | 6.0 | 4.0 | 4.5 | 1.0 | 1.0 | 1.0 | 2.0 | 5.0 |
| 2 | 6.5 | 4.0 | 3.0 | 3.0 | 6.5 | 3.0 | 2.0 | 3.0 | 5.0 | 6.0 | 4.5 | 4.0 |
| 3 | 4.5 | 2.0 | 3.0 | 9.5 | 13.0 | 7.5 | 16.0 | 16.0 | 16.0 | 16.5 | 13.0 | 8.0 |
| 4 | 5.0 | 4.0 | 3.0 | 5.0 | 6.5 | 6.5 | 4.0 | 4.0 | 4.5 | 5.0 | 4.0 | 3.0 |
| 5 | 4.5 | 5.0 | 4.5 | 2.0 | 1.0 | 3.0 | 4.5 | 4.0 | 3.0 | 3.0 | 1.0 | 3.0 |
| 6 | 2.0 | 4.0 | 6.0 | 4.0 | 2.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 3.0 |
| 7 | 6.0 | 4.5 | 4.5 | 8.0 | 4.5 | 4.5 | 3.0 | 2.0 | 4.0 | 2.0 | 1.0 | 1.0 |
| 8 | 3.0 | 4.0 | 3.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 3.0 |
| 9 | 5.0 | 4.0 | 4.5 | 5.0 | 9.0 | 5.0 | 8.0 | 8.0 | 6.5 | 4.5 | 6.5 | 6.0 |
| 10 | 8.0 | 8.0 | 10.5 | 9.5 | 8.0 | 7.5 | 9.0 | 11.0 | 7.5 | 5.0 | 5.0 | 4.5 |
| 11 | 8.0 | 12.0 | 6.0 | 2.0 | 2.0 | 2.0 | 3.0 | 4.0 | 6.0 | 6.0 | 4.0 | 4.5 |
| 12 | 4.5 | 6.0 | 4.5 | 3.0 | 4.5 | 2.0 | 2.0 | 4.0 | 4.5 | 2.0 | 3.0 | 3.0 |
| 13 | 5.0 | 3.0 | 2.0 | 1.0 | 2.0 | 2.0 | 0.0 | 1.0 | 1.0 | 0.0 | 2.0 | 4.5 |
| 14 | 6.0 | 4.0 | 1.0 | 5.0 | 6.0 | 5.0 | 13.0 | 14.5 | 13.0 | 9.5 | 6.0 | 7.5 |
| 15 | 11.0 | 9.5 | 9.5 | 6.0 | 6.0 | 5.0 | 9.0 | 11.0 | 12.0 | 14.5 | 10.5 | 9.5 |
| 16 | 12.0 | 14.5 | 15.0 | 12.0 | 10.5 | 9.5 | 6.5 | 3.0 | 3.0 | 1.0 | 2.0 | 4.5 |
| 17 | 9.0 | 5.0 | 6.0 | 6.0 | 4.0 | 6.5 | 4.5 | 4.5 | 2.0 | 6.0 | 3.0 | 4.0 |
| 18 | 9.0 | 11.0 | 8.0 | 7.5 | 8.0 | 4.5 | 6.0 | 7.5 | 5.0 | 4.5 | 3.0 | 4.5 |
| 19 | 4.5 | 4.5 | 4.0 | 4.0 | 3.0 | 2.0 | 1.0 | 1.0 | 2.0 | 2.0 | 3.0 | 6.0 |
| 20 | 4.0 | 4.5 | 5.0 | 2.0 | 4.5 | 4.0 | 2.0 | 2.0 | 3.0 | 1.0 | 1.0 | 3.0 |
| 21 | 9.5 | 9.5 | 8.0 | 6.0 | 7.5 | 7.5 | 6.0 | 4.5 | 1.0 | 4.5 | 4.5 | 8.0 |
| 22 | 8.0 | 8.0 | 6.0 | 6.0 | 6.0 | 6.5 | 8.0 | 4.5 | 12.0 | 14.5 | 18.0 | 27.5 |
| 23 | 19.0 | 21.0 | 15.0 | 12.0 | 9.0 | 8.0 | 5.0 | 2.0 | 2.0 | 3.0 | 2.0 | 1.0 |
| 24 | 6.0 | 6.5 | 4.0 | 0.0 | 2.0 | 2.0 | 3.0 | 3.0 | 6.0 | 12.0 | 7.5 | 6.0 |
| 25 | 10.5 | 11.0 | 8.0 | 8.0 | 10.5 | 9.5 | 8.0 | 2.0 | 2.0 | 1.0 | 2.0 | 6.0 |
| 26 | 8.0 | 13.5 | 9.5 | 13.5 | 22.5 | 15.0 | 14.5 | 13.5 | 12.0 | 13.0 | 11.0 | 16.0 |
| 27 | 23.0 | 23.0 | 16.5 | 8.0 | 6.5 | 1.0 | 3.0 | 7.5 | 5.0 | 6.0 | 6.0 | 5.0 |
| 28 | 8.0 | 10.5 | 6.5 | 7.5 | 4.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 | 4.5 |
| 29 | 16.0 | 12.0 | 12.0 | 14.5 | 8.0 | 9.5 | 8.0 | 10.5 | 9.5 | 16.5 | 17.0 | 19.0 |
| 30 | 23.0 | 17.0 | 14.5 | 9.5 | 11.0 | 6.5 | 8.0 | 2.0 | 3.0 | 0.0 | 1.0 | 2.0 |
| Sum | 265.0 | 257.5 | 209.0 | 185.5 | 195.0 | 151.0 | 165.5 | 153.0 | 154.5 | 163.0 | 147.5 | 186.5 |
| Mean | 8.8 | 8.6 | 7.0 | 6.2 | 6.5 | 5.0 | 5.5 | 5.1 | 5.2 | 5.4 | 4.9 | 6.2 |
| Relative Velocity | 1.42 | 1.39 | 1.13 | 1.00 | 1.05 | 0.81 | 0.89 | 0.82 | 0.84 | 0.87 | 0.79 | 1.00 |

ANEMOGRAPH. DIRECTION.

DECEMBER, 1857.

| HOURS RECKONED FROM NOON. | | | | | | | | | | | | | | | |
|---------------------------|------------------|---------------|------------------|--------------|-------------------|----------------|-------------------|---------------|-------------------|-----------------|--------------------|----------------|--------------------|-----------------|--------------------|
| Day. | 0 h. | 2 h. | 4 h. | 6 h. | 8 h. | 10 h. | 12 h. | 14 h. | 16 h. | 18 h. | 20 h. | 22 h. | | | |
| | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | Div. | | | |
| 1 | 4.5 | 4.5 | 4.5 | 5.5 | 5.5 | 11.5 | 11.5 | 11.5 | 10.5 | 8.5 | 8.5 | 8.0 | | | |
| 2 | 12.5 | 8.5 | 8.5 | 7.5 | 8.5 | 8.5 | 8.0 | 8.0 | 8.5 | 8.5 | 8.5 | 8.5 | | | |
| 3 | 8.5 | 8.5 | 8.5 | 10.5 | 12.5 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | | | |
| 4 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 5 | 12.0 | 12.0 | 12.0 | 12.0 | 10.5 | 10.5 | 10.0 | 9.0 | 9.0 | 10.0 | 10.0 | 12.0 | | | |
| 6 | 9.5 | 11.5 | 12.0 | 10.0 | 10.5 | 9.0 | 11.5 | 11.5 | 10.0 | 12.0 | 11.5 | 12.0 | | | |
| 7 | 12.5 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | | | |
| 8 | 12.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.5 | 8.5 | 8.5 | 8.5 | | | |
| 9 | 9.0 | 11.5 | 9.5 | 9.5 | 9.5 | 9.0 | 9.0 | 8.5 | 8.5 | 9.0 | 9.0 | 8.5 | | | |
| 10 | 11.5 | 11.5 | 10.0 | 10.0 | 10.0 | 10.0 | 10.5 | 10.5 | 10.5 | 10.0 | 10.0 | 10.0 | | | |
| 11 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | | |
| 12 | 10.0 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 13 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.5 | 9.5 | | | |
| 14 | 12.5 | 12.0 | 12.0 | 9.5 | 8.5 | 9.0 | 9.5 | 11.5 | 12.0 | 12.0 | 11.5 | 12.0 | | | |
| 15 | 12.0 | 11.5 | 11.5 | 10.0 | 12.0 | 12.0 | 12.0 | 12.0 | 11.5 | 11.5 | 11.5 | 9.0 | | | |
| 16 | 12.5 | 12.5 | 12.0 | 12.0 | 12.0 | 10.5 | 12.0 | 12.5 | 9.5 | 12.0 | 12.0 | 12.0 | | | |
| 17 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.5 | 12.5 | 12.0 | 12.0 | 12.0 | 12.0 | 8.5 | | | |
| 18 | 8.5 | 8.5 | 8.5 | 8.5 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | | | |
| 19 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 9.5 | 8.5 | 8.5 | | | |
| 20 | 12.5 | 12.0 | 12.5 | 12.0 | 12.0 | 12.0 | 12.0 | 11.5 | 11.5 | 11.5 | 11.5 | 12.0 | | | |
| 21 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 11.5 | 11.5 | 11.5 | 12.0 | 12.0 | | | |
| 22 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 11.5 | 11.5 | 11.5 | 12.0 | | | |
| 23 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | | | |
| 24 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 12.0 | 12.5 | | | |
| 25 | 11.5 | 12.5 | 12.5 | 12.5 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | | |
| 26 | 13.0 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | | | |
| 27 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | | | |
| 28 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.0 | | | |
| 29 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | | | |
| 30 | 13.0 | 13.0 | 12.5 | 12.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| 31 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | | | |
| Mean di- rection | 261° | 255° | 257° | 251° | 255° | 254° | 256° | 256° | 252° | 251° | 250° | 249° | | | |
| Inten- sity | .80 | .86 | .79 | .79 | .81 | .86 | .86 | .86 | .86 | .85 | .83 | .79 | | | |
| 0 { N 0° | 1 { NNE 22°.5 | 2 { NE 45° | 3 { ENE 67°.5 | 4 { E 90° | 5 { ESE 112°.5 | 6 { SE 135° | 7 { SSE 157°.5 | 8 { S 180° | 9 { SSW 202°.5 | 10 { SW 225° | 11 { WSW 247°.5 | 12 { W 270° | 13 { WNW 292°.5 | 14 { NW 315° | 15 { NNW 337°.5 |

ANEMOGRAPH. VELOCITY.

DECEMBER, 1857.

| Day. | HOURS RECKONED FROM NOON. | | | | | | | | | | | |
|-------------------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 22—0 | 0—2 | 2—4 | 4—6 | 6—8 | 8—10 | 10—12 | 12—14 | 14—16 | 16—18 | 18—20 | 20—22 |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 1 | 3.0 | 5.0 | 6.0 | 4.5 | 4.0 | 8.0 | 8.0 | 3.0 | 4.0 | 9.0 | 9.5 | 11.0 |
| 2 | 8.0 | 11.0 | 16.0 | 11.0 | 13.0 | 15.0 | 13.0 | 11.0 | 23.0 | 21.0 | 22.0 | 21.0 |
| 3 | 22.0 | 17.0 | 13.0 | 15.0 | 12.0 | 16.0 | 18.0 | 20.0 | 20.0 | 21.0 | 13.5 | 14.5 |
| 4 | 17.5 | 13.5 | 5.0 | 4.0 | 4.5 | 4.5 | 5.0 | 6.5 | 4.5 | 3.0 | 3.0 | 2.0 |
| 5 | 11.0 | 13.0 | 5.0 | 3.0 | 4.0 | 5.0 | 6.5 | 8.0 | 9.0 | 6.5 | 4.5 | 6.5 |
| 6 | 9.5 | 7.5 | 7.5 | 5.0 | 6.0 | 6.0 | 12.0 | 12.0 | 7.5 | 7.5 | 7.5 | 9.5 |
| 7 | 13.5 | 18.0 | 17.5 | 23.0 | 23.0 | 16.0 | 11.0 | 4.0 | 1.0 | 2.0 | 2.0 | 3.0 |
| 8 | 0.0 | 4.5 | 6.0 | 8.0 | 6.0 | 5.0 | 4.5 | 4.5 | 6.0 | 6.5 | 16.0 | 8.0 |
| 9 | 12.0 | 8.0 | 9.0 | 6.0 | 6.0 | 10.5 | 6.5 | 8.0 | 9.0 | 11.0 | 7.5 | 11.0 |
| 10 | 4.5 | 5.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.5 | 3.0 | 4.0 | 5.0 | 1.0 | 1.0 |
| 11 | 3.0 | 4.5 | 2.0 | 3.0 | 2.0 | 1.0 | 2.0 | 4.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| 12 | 4.5 | 6.0 | 4.5 | 3.0 | 4.5 | 4.0 | 3.0 | 2.0 | 2.0 | 2.0 | 4.0 | 4.0 |
| 13 | 6.0 | 4.5 | 4.5 | 3.0 | 3.0 | 4.5 | 4.5 | 4.0 | 6.5 | 6.0 | 6.5 | 6.5 |
| 14 | 8.0 | 13.0 | 11.0 | 6.0 | 10.5 | 6.5 | 8.0 | 8.0 | 8.0 | 10.5 | 9.5 | 9.0 |
| 15 | 11.0 | 8.0 | 8.0 | 6.5 | 8.0 | 7.5 | 8.0 | 13.0 | 13.0 | 13.0 | 11.0 | 10.5 |
| 16 | 9.5 | 17.0 | 22.5 | 8.0 | 8.0 | 5.0 | 16.0 | 16.0 | 8.0 | 8.0 | 12.0 | 19.0 |
| 17 | 19.0 | 22.5 | 20.0 | 17.5 | 16.5 | 12.0 | 16.0 | 15.0 | 16.5 | 14.5 | 13.0 | 10.5 |
| 18 | 14.5 | 12.0 | 15.0 | 17.5 | 16.0 | 13.0 | 10.5 | 7.5 | 9.0 | 8.0 | 9.0 | 8.0 |
| 19 | 11.0 | 12.0 | 8.0 | 4.0 | 2.0 | 2.0 | 1.0 | 2.0 | 3.0 | 4.0 | 12.0 | 16.0 |
| 20 | 14.5 | 21.0 | 23.0 | 21.0 | 19.0 | 21.0 | 17.5 | 13.0 | 10.5 | 13.0 | 18.0 | 22.0 |
| 21 | 29.5 | 35.0 | 33.5 | 30.5 | 29.5 | 23.5 | 35.0 | 33.5 | 21.0 | 26.0 | 29.5 | 29.5 |
| 22 | 29.5 | 32.0 | 32.0 | 23.0 | 26.0 | 26.0 | 33.5 | 25.5 | 25.0 | 22.5 | 22.5 | 22.5 |
| 23 | 25.0 | 21.0 | 21.0 | 13.5 | 17.5 | 13.0 | 12.0 | 13.5 | 10.5 | 15.0 | 10.5 | 10.5 |
| 24 | 14.5 | 16.0 | 17.0 | 12.0 | 16.0 | 12.0 | 19.0 | 16.5 | 16.0 | 16.0 | 16.0 | 16.0 |
| 25 | 17.5 | 16.5 | 14.5 | 10.5 | 4.5 | 3.0 | 5.0 | 3.0 | 1.0 | 2.0 | 2.0 | 1.0 |
| 26 | 5.0 | 6.0 | 6.0 | 3.0 | 1.0 | 4.0 | 1.0 | 1.0 | 0.0 | 4.0 | 4.0 | 2.0 |
| 27 | 4.0 | 5.0 | 6.5 | 4.0 | 6.0 | 6.0 | 2.0 | 3.0 | 0.0 | 1.0 | 1.0 | 1.0 |
| 28 | 6.0 | 8.0 | 4.5 | 4.0 | 6.0 | 7.5 | 6.5 | 6.5 | 4.5 | 4.5 | 6.5 | 8.0 |
| 29 | 8.0 | 8.0 | 6.5 | 4.0 | 3.0 | 4.5 | 3.0 | 3.0 | 2.0 | 2.0 | 3.0 | 2.0 |
| 30 | 3.0 | 4.0 | 6.0 | 4.0 | 6.0 | 6.0 | 6.0 | 4.5 | 5.0 | 5.0 | 6.0 | 5.0 |
| 31 | 4.0 | 4.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 6.0 | 3.0 | 1.0 |
| Sum | 348.0 | 379.5 | 358.0 | 284.5 | 289.5 | 275.0 | 302.5 | 278.5 | 256.5 | 279.5 | 239.5 | 295.5 |
| Mean | 11.2 | 12.2 | 11.6 | 9.2 | 9.3 | 8.9 | 9.8 | 9.0 | 8.3 | 9.0 | 9.3 | 9.6 |
| Relative Velocity | 1.14 | 1.24 | 1.18 | 0.94 | 0.95 | 0.91 | 1.00 | 0.92 | 0.85 | 0.92 | 0.95 | 0.98 |

JANUARY, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|--------|---------|-----------------|----------------|------------------------|-----------------------|
| | | Air. | Evap. | Shade. | | Sun. | Grass. | | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.678 | 46.3 | 46.2 | 50.5 | 42.5 | 65 | 39 | 0.10 | W | 207 | 7 | Fair; dull. |
| 2 | 29.383 | 43.5 | 41.8 | 50.5 | 38.5 | 61 | 36 | .11 | S W | 210 | 6 | Fine. |
| 3 | 28.898 | 41.2 | 39.5 | 49.5 | 38.0 | 55 | 38 | .07 | W | 424 | 8 | Stormy. |
| 4 | 29.338 | 36.4 | 36.3 | 41.0 | 32.0 | 42 | 33 | .14 | W N W | 258 | 10 | Stormy. |
| 5 | 29.917 | 30.7 | 29.6 | 33.0 | 26.0 | 42 | 29 | ..... | N W | 238 | 4 | Sleet & snow; fine. |
| 6 | 30.131 | 31.5 | 31.8 | 34.0 | 26.5 | 34 | 26 | ..... | N N W | 209 | 10 | Drizzle; dull. |
| 7 | 30.185 | 31.4 | 31.8 | 33.5 | 29.0 | 33 | 32 | .10 | N N W | 67 | 10 | Overcast. |
| 8 | 30.061 | 36.7 | 37.2 | 41.0 | 32.5 | 41 | 32 | .04 | N N W | 70 | 10 | Snow; damp fog. |
| 9 | 29.548 | 47.2 | 47.3 | 50.5 | 40.0 | 50 | 40 | .91 | N N W | 195 | 9 | Dampfog; heavy rain. |
| 10 | 29.013 | 45.1 | 44.5 | 50.0 | 40.5 | 59 | 41 | .43 | N N E | 143 | 8 | Fine; rain. |
| 11 | 29.071 | 38.9 | 38.6 | 44.0 | 30.0 | 44 | 31 | .02 | N E | 139 | 7 | Damp; fine. |
| 12 | 29.039 | 33.5 | 34.2 | 38.0 | 30.0 | 46 | 31 | .01 | W N W | 80 | 7 | Fair. |
| 13 | 29.605 | 34.3 | 33.5 | 37.0 | 27.5 | 36 | 31 | ..... | W | 85 | 3 | Foggy; fine. |
| 14 | 29.951 | 31.3 | 30.8 | 35.5 | 26.0 | 52 | 26 | ..... | S W | 65 | 3 | Fine. |
| 15 | 29.870 | 36.1 | 36.5 | 42.5 | 31.0 | 46 | 31 | .26 | W S W | 80 | 3 | Rain; starlight. |
| 16 | 30.072 | 37.1 | 36.6 | 44.0 | 31.0 | 55 | 31 | ..... | S W | 93* | 4 | Fine. |
| 17 | 30.134 | 43.2 | 43.3 | 47.0 | 36.0 | 55 | 37 | ..... | S S W | 132* | 9 | Cloudy. |
| 18 | 30.076 | 46.8 | 47.0 | 49.0 | 35.5 | 49 | 42 | .02 | S W | 191* | 9 | Overcast; starlight. |
| 19 | 29.911 | 39.7 | 39.1 | 47.5 | 33.0 | 54 | 31 | ..... | W S W | 95 | 4 | Dull; fair. |
| 20 | 29.198 | 31.5 | 32.4 | 44.0 | 27.5 | 44 | 30 | .31 | W S W | 123 | 4 | Snow; fine. |
| 21 | 29.527 | 35.1 | 35.2 | 37.0 | 28.5 | 54 | 28 | ..... | W | 75 | 3 | Fine. |
| 22 | 29.363 | 38.4 | 37.8 | 44.0 | 35.0 | 43 | ... | .04 | S W | 216 | 8 | Fair. |
| 23 | 28.976 | 37.5 | 36.4 | 43.0 | 34.0 | 55 | 32 | .08 | S W | 197* | 9 | Fine; snow, hail, &c. |
| 24 | 29.018 | 37.6 | 36.6 | 42.0 | 35.5 | 42 | 33 | .13 | NNW* | 172 | 10 | Overcast. |
| 25 | 29.415 | 34.3 | 34.4 | 38.0 | 32.5 | 38 | 32 | .16 | N* | 232 | 10 | Snow and rain. |
| 26 | 29.675 | 32.0 | 32.3 | 36.5 | 27.0 | 38 | 27 | ..... | N N E* | 208 | 7 | Snow. |
| 27 | 29.718 | 30.7 | 28.3 | 35.5 | 23.0 | 54 | 23 | ..... | N* | 79 | 1 | Fine. |
| 28 | 29.639 | 29.0 | 28.0 | 35.0 | 19.5 | 45 | 22 | ..... | N* | 77 | 7 | Fine; snow. |
| 29 | 29.706 | 25.2 | 26.9 | 31.0 | 19.0 | 46 | 21 | ..... | S W | 90 | 3 | Fine. |
| 30 | 29.479 | 33.2 | 33.1 | 37.0 | 29.0 | 47 | 30 | .25 | S W | 106 | 9 | Snow; rain. |
| 31 | 29.662 | 33.5 | 31.7 | 38.0 | 25.0 | 54 | 26 | ..... | S E | 86 | 4 | Fine. |
| Mean or Sum | 29.589 | 36.4 | 36.1 | 41.3 | 31.0 | 48.0 | 31.0 | 3.18 | N 81° W | 4642 | 6.6 | |

Moon's Phases, &c.

| | | | | | |
|----------------|----------------|----------------|-----------------|-----------------|---------------|
| 3 ^d | 0 ^h | First Quarter. | 17 ^d | 17 ^h | Last Quarter. |
| 5 | 5 | Perigee. | 25 | 11 | New. |
| 9 | 21 | Full. | 29 | 22 | Perigee. |
| 17 | 15 | Apogee. | | | |

* Eye observations.

FEBRUARY, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|-------------|------|---------|-----------------|----------------|---------------------|--------------------|
| | | | | Shade. | | Sun. Grass. | | | Direc- tion. | Hor. Motion | | |
| | | Air. | Evap. | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.603 | 32.5 | 31.7 | 36.5 | 27.0 | 42 | 27 | ..... | N E | 83 | 9 | Fair. |
| 2 | 29.359 | 32.6 | 31.5 | 36.0 | 27.0 | 37 | 29 | ..... | E | 158 | 10 | Snow; cloudy. |
| 3 | 29.823 | 28.6 | 27.3 | 30.5 | 22.0 | 45 | 23 | ..... | N E | 121 | 10 | Snow; cloudy. |
| 4 | 30.037 | 29.0 | 27.2 | 33.0 | 23.5 | 54 | 25 | ..... | N E | 50 | 8 | Snow; fair. |
| 5 | 29.773 | 38.1 | 37.8 | 43.0 | 32.0 | 39 | 32 | ..... | W S W | 138 | 10 | Dull; cold thaw. |
| 6 | 29.644 | 43.4 | 42.9 | 47.5 | 39.5 | 57 | 34 | ..... | W S W | 143 | 8 | Dull; variable. |
| 7 | 29.497 | 42.0 | 40.3 | 45.0 | 39.0 | 46 | 36 | ..... | S | 144 | 10 | Overcast. |
| 8 | 29.427 | 41.7 | 40.1 | 43.0 | 37.0 | 43 | 34 | 0.08 | S S E | 136 | 9 | Overcast and damp. |
| 9 | 29.313 | 43.0 | 40.3 | 47.0 | 36.5 | 55 | 34 | .02 | S | 200 | 6 | Fine; damp. |
| 10 | 29.563 | 41.5 | 39.5 | 48.0 | 36.0 | 55 | 33 | ..... | S W | 149 | 5 | Fine; variable. |
| 11 | 29.912 | 42.3 | 37.6 | 48.5 | 32.0 | 65 | 31 | .01 | W | 224 | 5 | Fine; cloudy. |
| 12 | 30.175 | 37.5 | 34.9 | 46.0 | 31.0 | 65 | 31 | ..... | W S W | 132 | 5 | Hazy; fine. |
| 13 | 30.093 | 38.4 | 36.2 | 45.5 | 32.0 | 64 | 31 | ..... | W S W | 98 | 6 | Fine; haze. |
| 14 | 30.022 | 35.0 | 33.5 | 42.5 | 26.0 | 60 | 27 | ..... | S E | 66 | 3 | Fine; haze. |
| 15 | 29.922 | 35.9 | 35.2 | 41.0 | 29.0 | 42 | 31 | ..... | E S E | 86 | 10 | Overcast; fog. |
| 16 | 29.852 | 44.4 | 42.4 | 51.5 | 32.5 | 64 | 34 | ..... | S S E | 65 | 4 | Fog; fair. |
| 17 | 29.786 | 45.5 | 44.6 | 50.5 | 38.5 | 66 | 36 | .05 | S S E | 50 | 10 | Fine; rain. |
| 18 | 29.861 | 44.1 | 43.1 | 52.0 | 37.0 | 60 | 37 | .10 | S S W | 56 | 10 | Overcast; fog. |
| 19 | 29.981 | 43.1 | 42.0 | 48.5 | 38.0 | 64 | 36 | .01 | E | 35 | 10 | Fair; cloudy. |
| 20 | 30.024 | 40.8 | 39.2 | 48.5 | 33.0 | 60 | 31 | .03 | S S W | 71 | 6 | Drizzle; fair. |
| 21 | 30.079 | 44.8 | 43.4 | 50.5 | 41.0 | 55 | 36 | .02 | S W | 130 | 7 | Dull; fine. |
| 22 | 30.036 | 41.2 | 39.3 | 52.0 | 30.5 | 62 | 31 | ..... | S | 82 | 1 | Dull; fine. |
| 23 | 30.094 | 40.7 | 40.2 | 51.0 | 31.0 | 72 | 31 | ..... | E N E | 54 | 6 | Foggy. |
| 24 | 29.982 | 38.7 | 36.8 | 50.5 | 28.0 | 62 | 30 | ..... | S E | 51 | 6 | Dull; fine. |
| 25 | 30.168 | 36.4 | 35.6 | 44.0 | 28.5 | 46 | 29 | ..... | N W | 57 | 7 | Dull; variable. |
| 26 | 30.288 | 38.9 | 36.4 | 47.0 | 33.0 | 69 | 31 | ..... | S W | 50 | 4 | Foggy. |
| 27 | 30.284 | 44.9 | 43.4 | 48.0 | 40.0 | 57 | 39 | ..... | S W | 116 | 10 | Variable. |
| 28 | 30.358 | 43.4 | 42.0 | 54.0 | 35.5 | 75 | 34 | ..... | N W | 58 | 2 | Very fine. |
| Mean or Sum | 29.891 | 39.6 | 38.0 | 45.8 | 32.7 | 56.5 | 31.9 | 0.32 | S 10° W | 2803 | 6.9 | |

Moon's Phases, &c.

| | | | |
|-------------------------------|----------------|---------------------------------|---------------|
| 1 ^d 8 ^h | First Quarter. | 16 ^d 14 ^h | Last Quarter. |
| 8 12 | Full. | 24 0 | New. |
| 14 12 | Apogee. | 26 6 | Perigee. |

Day h.
4 10

Lunar halo.

MARCH. 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|-------|---------|-----------------|----------------|---------------------|---------------------|
| | | Air. | Evap. | Shade. | | Sun. | Grass | | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 30.338 | 48.4 | 48.4 | 52.5 | 38.5 | 68 | 42 | ..... | N E | 111 | 7 | Fog; overcast. |
| 2 | 30.284 | 44.8 | 43.7 | 49.0 | 40.0 | 51 | 40 | ..... | E N E | 73 | 10 | Overcast. |
| 3 | 30.129 | 42.2 | 41.7 | 46.0 | 37.0 | 58 | 35 | ..... | S S E | 88 | 5 | Fair. |
| 4 | 30.060 | 39.4 | 39.6 | 51.0 | 29.0 | 54 | 30 | ..... | W | 159 | 4 | Overcast; rain. |
| 5 | 29.962 | 44.2 | 43.1 | 48.0 | 39.0 | 66 | 34 | ..... | S W | 217 | 6 | Fair. |
| 6 | 29.818 | 44.8 | 42.6 | 52.0 | 37.0 | 69 | 30 | ..... | W S W | 147 | 10 | Fair. |
| 7 | 29.598 | 43.3 | 41.1 | 52.0 | 35.0 | 67 | 34 | ..... | W S W | 216 | 10 | Fair. |
| 8 | 29.434 | 36.3 | 34.6 | 43.0 | 31.0 | 52 | 29 | ..... | W N W | 211 | 3 | Snow; variable. |
| 9 | 29.854 | 32.8 | 33.1 | 43.0 | 26.0 | 58 | 27 | ..... | N N W | 179 | 3 | Snow storms. |
| 10 | 29.759 | 34.9 | 33.2 | 39.0 | 28.0 | 61 | 27 | ..... | N | 45 | 10 | Fair overcast. |
| 11 | 29.796 | 33.7 | 33.2 | 39.5 | 26.5 | 41 | 26 | ..... | S | 71 | 10 | Overcast. |
| 12 | 29.749 | 38.8 | 38.1 | 46.0 | 33.0 | 51 | 31 | 0.01 | S S W | 114 | 7 | Fall; variable. |
| 13 | 29.193 | 40.5 | 40.0 | 51.0 | 35.0 | 45 | 31 | .20 | S | 242 | 5 | Rain & snow; clear. |
| 14 | 28.970 | 47.1 | 44.6 | 53.0 | 36.0 | 66 | 35 | .14 | W S W | 417 | 5 | Stormy; rain. |
| 15 | 29.568 | 39.5 | 38.9 | 47.0 | 35.5 | 63 | 34 | .03 | W S W | 337 | 4 | Stormy. |
| 16 | 29.762 | 42.8 | 41.8 | 52.5 | 35.0 | 71 | ... | ..... | S | 110 | 5 | Fair. |
| 17 | 29.575 | 45.3 | 42.9 | 52.0 | 35.5 | 58 | 32 | ..... | S S E | 72 | 7 | Fair. |
| 18 | 29.609 | 50.4 | 49.0 | 61.0 | 42.0 | 72 | 43 | .10 | S | 73 | 10 | Fair. |
| 19 | 29.713 | 50.1 | 51.1 | 52.5 | 40.0 | 53 | 45 | .12 | E | 58 | 10 | Damp. |
| 20 | 29.815 | 41.6 | 40.0 | 52.5 | 30.0 | 54 | 32 | .04 | E N E | 207 | 4 | Damp. |
| 21 | 29.818 | 33.4 | 32.2 | 39.0 | 29.0 | 60 | 30 | .04 | N N E | 257 | 2 | Fair; cold wind. |
| 22 | 29.590 | 35.0 | 36.7 | 40.0 | 31.5 | 54 | 32 | ..... | W N W | 155 | 7 | Snow. |
| 23 | 29.440 | 35.8 | 35.6 | 42.0 | 31.0 | 55 | 30 | .01 | S | 92 | 5 | Heavy clouds; snow. |
| 24 | 29.294 | 41.4 | 38.3 | 47.0 | 39.0 | 55 | 36 | .04 | E | 190 | 10 | Fair; rain. |
| 25 | 29.364 | 36.9 | 37.4 | 46.5 | 30.0 | 52 | 31 | .01 | S S W | 120 | 7 | Damp. |
| 26 | 29.720 | 43.8 | 42.0 | 48.0 | 39.0 | 67 | 36 | ..... | N N W | 48 | 8 | Fair; heavy clouds. |
| 27 | 29.831 | 43.5 | 42.6 | 47.0 | 39.0 | 50 | 39 | ..... | N | 23 | 8 | Overcast. |
| 28 | 29.701 | 45.9 | 44.2 | 51.0 | 41.0 | 67 | 41 | .19 | E S E | 97 | 10 | Fair. |
| 29 | 29.297 | 46.6 | 45.8 | 51.0 | 43.0 | 50 | 41 | .29 | S S E | 106 | 9 | Rain. |
| 30 | 28.974 | 45.4 | 45.0 | 53.0 | 42.5 | 65 | 41 | .17 | S W | 213 | 10 | Showery. |
| 31 | 29.187 | 45.4 | 44.6 | 51.5 | 39.0 | 59 | 30 | .15 | W S W | 142 | 10 | Overcast; hail. |
| Mean or Sum | 29.651 | 41.8 | 40.9 | 48.4 | 35.2 | 58.5 | 34.1 | 1.54 | S44°W | 4600 | 7.1 | |

Moon's Phases, &c.

2^d 17^h First Quarter.18^d 9^h Last Quarter.

10 4 Full.

25 10 New.

14 5 Apogee.

26 12 Perigee

| Day. | h. | | Day. | h. | |
|------|----|---------------------------------|------|----|---------------|
| 11 | 12 | Lunar halo. Apricot in blossom. | 31 | 5 | A hail storm. |

APRIL, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|--------|---------|-----------------|----------------|---------------------|--------------------|
| | | Air. | Evap. | Shade. | | Sun. | Grass. | | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.036 | 47.8 | 45.3 | 55.0 | 44.0 | 65 | 43 | 0.09 | E S E | 145 | 10 | Fair; rain. |
| 2 | 29.178 | 49.2 | 47.3 | 54.5 | 45.0 | 60 | 43 | .08 | S | 120 | 9 | Cloudy; rain. |
| 3 | 29.513 | 46.9 | 45.2 | 53.5 | 41.5 | 65 | 41 | .03 | S S W | 84 | 10 | Mild; showery. |
| 4 | 29.505 | 51.5 | 50.6 | 56.0 | 48.5 | 52 | 49 | .76 | S S E | 83 | 10 | Cloudy; rain. |
| 5 | 29.582 | 54.8 | 52.4 | 64.0 | 51.5 | 75 | 50 | .12 | S E | 42 | 10 | Rain; overcast. |
| 6 | 29.604 | 50.6 | 48.8 | 60.0 | 44.0 | 66 | 43 | ..... | S W | 99 | 10 | Variable. |
| 7 | 29.747 | 50.9 | 48.4 | 60.0 | 45.0 | 78 | 44 | ..... | W S W | 125 | 5 | Variable; fall. |
| 8 | 29.394 | 48.1 | 46.3 | 57.0 | 42.5 | 66 | 42 | ..... | S S W | 106 | 8 | Variable. |
| 9 | 29.308 | 47.7 | 44.4 | 59.5 | 35.0 | 73 | 35 | ..... | S S W | 56 | 6 | Variable. |
| 10 | 29.228 | 50.9 | 47.0 | 61.0 | 40.0 | 87 | 42 | .07 | W | 71 | 8 | Fair; rain. |
| 11 | 29.317 | 41.7 | 38.1 | 49.0 | 34.0 | 53 | 33 | ..... | W | 176 | 7 | Rain; cloudy. |
| 12 | 28.915 | 38.8 | 36.9 | 49.5 | 34.5 | 70 | 32 | .33 | W S W | 230 | 10 | Variable; rain. |
| 13 | 29.031 | 37.1 | 35.5 | 43.0 | 33.5 | 48 | 34 | .15 | W S W | 174 | 10 | Rain and snow. |
| 14 | 29.292 | 39.2 | 36.7 | 48.5 | 31.5 | 59 | 31 | ..... | W | 82 | 3 | Fair. |
| 15 | 29.495 | 41.5 | 39.4 | 52.5 | 33.0 | 76 | 32 | ..... | S S W | 78 | 6 | Fair. |
| 16 | 29.676 | 41.9 | 40.6 | 52.5 | 34.5 | 67 | 34 | ..... | S S E | 89 | 6 | Fair. |
| 17 | 29.717 | 50.9 | 47.0 | 57.5 | 44.0 | 63 | 41 | ..... | S S E | 146 | 6 | Fall; fair. |
| 18 | 29.669 | 56.6 | 50.7 | 66.0 | 46.5 | 80 | 43 | ..... | S S E | 113 | 4 | Fair. |
| 19 | 29.948 | 51.7 | 47.9 | 63.5 | 41.5 | 84 | 39 | ..... | S W | 110 | 2 | Fair. |
| 20 | 30.085 | 49.5 | 45.7 | 61.0 | 39.5 | 84 | 40 | .07 | W S W | 133 | 5 | Fine; rain & hail. |
| 21 | 30.020 | 50.4 | 45.9 | 58.5 | 45.0 | 71 | 44 | .12 | W | 143 | 5 | Fair. |
| 22 | 29.792 | 46.1 | 38.9 | 53.5 | 37.0 | 56 | ... | .17 | N | 105 | 7 | Showery. |
| 23 | 29.832 | 38.3 | 35.6 | 45.5 | 28.5 | 54 | 30 | ..... | N E | 97 | 8 | Variable. |
| 24 | 29.629 | 41.5 | 38.6 | 48.0 | 36.0 | 64 | 35 | ..... | E S E | 68 | 10 | Fair; fall. |
| 25 | 29.546 | 40.2 | 37.1 | 48.0 | 35.0 | 47 | 33 | ..... | E N E | 178 | 7 | Overcast. |
| 26 | 29.849 | 38.6 | 35.7 | 43.0 | 34.0 | 57 | 34 | .02 | N N E | 187 | 10 | Very cold wind. |
| 27 | 29.907 | 39.2 | 37.1 | 41.0 | 34.0 | 44 | 36 | .01 | N N E | 108 | 10 | Hail and rain. |
| 28 | 29.862 | 38.5 | 35.4 | 47.0 | 27.5 | 63 | 29 | ..... | N N E | 55 | 7 | Heavy clouds. |
| 29 | 29.891 | 42.6 | 39.3 | 49.0 | 35.0 | 69 | 34 | ..... | N N W | 92 | 9 | Fine. |
| 30 | 29.918 | 44.0 | 41.3 | 48.0 | 35.0 | 61 | 39 | ..... | N N E | 78 | 10 | Overcast. |
| Mean or Sum | 29.585 | 45.5 | 42.8 | 53.5 | 38.5 | 65.2 | 38.1 | 2.02 | S 25° W | 3373 | 7.6 | |

Moon's Phases, &c.

1^d 2^h First Quarter.
 8 21 Full.
 10 14 Apogee.
 17 0 Last Quarter.

23^d 19^h New.
 ... 22 Perigee.
 30 12 First Quarter.

Day h. ... Buds of laburnum, hawthorn, lilac, &c.
 3 ... bursting into leaf.
 9 10 Lunar halo.
 12 8 Vivid lightning till 9^h.

Day h. 13 10 Hail fell.
 27 ... Pear in blossom.

MAY, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|--------|---------|-----------------|----------------|---------------------|--------------------|
| | | Air. | Evap. | Shade. | | Sun. | Grass. | | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.912 | 44.3 | 42.0 | 51.0 | 36.5 | 76 | 36 | ..... | W N W | 53 | 10 | Variable; drizzle. |
| 2 | 29.948 | 43.4 | 40.1 | 53.0 | 31.5 | 75 | 32 | ..... | N N E | 88 | 6 | Fair. |
| 3 | 29.979 | 41.9 | 39.1 | 50.0 | 32.5 | 75 | 32 | ..... | N N E | 191 | 7 | Fair. |
| 4 | 30.023 | 42.0 | 38.3 | 51.5 | 30.5 | 74 | 30 | ..... | N E | 132 | 5 | Fair. |
| 5 | 30.072 | 41.4 | 38.7 | 49.0 | 30.5 | 66 | 32 | ..... | N E | 93 | 6 | Fair. |
| 6 | 30.036 | 42.4 | 39.7 | 51.5 | 30.5 | 65 | 32 | ..... | N E | 127 | 6 | Fair. |
| 7 | 29.922 | 44.2 | 41.4 | 52.0 | 35.0 | 63 | 35 | ..... | N E | 159 | 8 | Dull. |
| 8 | 29.741 | 46.2 | 42.2 | 58.0 | 35.0 | 76 | 36 | ..... | N E | 142 | 2 | Fair. |
| 9 | 29.570 | 51.2 | 46.6 | 64.0 | 38.0 | 87 | 38 | ..... | N E | 140 | 7 | Dull; fair. |
| 10 | 29.487 | 49.7 | 48.4 | 55.0 | 46.0 | 68 | 45 | 0.40 | N N E | 139 | 10 | Dull; drizzle. |
| 11 | 29.620 | 53.4 | 51.7 | 58.0 | 45.5 | 66 | 46 | 0.04 | N E | 72 | 10 | Showery; lightning |
| 12 | 29.832 | 56.3 | 54.3 | 64.0 | 48.0 | 64 | 51 | ..... | S | 83 | 9 | Dull. |
| 13 | 29.804 | 60.6 | 55.7 | 70.5 | 52.0 | 87 | 50 | ..... | E N E | 76 | 6 | Fair. |
| 14 | 29.802 | 59.9 | 55.8 | 73.0 | 48.0 | 90 | 48 | ..... | E | 65 | 5 | Fair. |
| 15 | 29.923 | 61.1 | 57.8 | 66.0 | 53.0 | 89 | 51 | .24 | N N W | 45 | 10 | Fair; thunder. |
| 16 | 29.921 | 57.6 | 53.2 | 71.5 | 46.0 | 88 | 46 | ..... | W S W | 111 | 3 | Fine. |
| 17 | 29.864 | 56.9 | 51.8 | 70.0 | 45.5 | 94 | 45 | ..... | S W | 112 | 2 | Fine. |
| 18 | 29.775 | 57.6 | 53.2 | 69.0 | 50.0 | 93 | 48 | ..... | W S W | 183 | 7 | Fine. |
| 19 | 29.706 | 57.8 | 53.8 | 67.5 | 51.5 | 89 | 52 | ..... | S W | 131 | 7 | Dull; variable. |
| 20 | 29.516 | 56.7 | 52.9 | 68.0 | 51.5 | 80 | 47 | ..... | S W | 92 | 8 | Fair; lowering. |
| 21 | 29.572 | 51.2 | 49.6 | 58.0 | 45.5 | 60 | 44 | .04 | S W | 69 | 10 | Dull; drizzle. |
| 22 | 29.586 | 51.8 | 49.1 | 58.5 | 48.0 | 64 | 47 | .14 | E N E | 66 | 10 | Overcast. |
| 23 | 29.288 | 56.6 | 54.0 | 65.5 | 50.0 | 69 | 51 | .02 | S E | 103 | 10 | Drizzle. |
| 24 | 29.340 | 56.0 | 52.0 | 64.5 | 43.5 | 83 | 45 | ..... | S S W | 77 | 3 | Dull; fair. |
| 25 | 29.223 | 57.5 | 53.5 | 69.5 | 46.0 | 84 | 46 | 0.31 | S E | 102 | 8 | Fair; rain. |
| 26 | 29.468 | 56.3 | 52.6 | 63.0 | 47.0 | 75 | 46 | ..... | S S E | 91 | 6 | Variable. |
| 27 | 29.593 | 55.6 | 51.4 | 67.0 | 40.5 | 76 | 42 | ..... | S S E | 56 | 6 | Fair. |
| 28 | 29.674 | 56.2 | 53.0 | 65.5 | 49.5 | 86 | 49 | ..... | N N E | 149 | 9 | Fair; dull. |
| 29 | 29.803 | 55.4 | 51.3 | 59.0 | 49.0 | 65 | 49 | ..... | N N E | 91 | 9 | Overcast. |
| 30 | 29.868 | 55.4 | 50.3 | 64.0 | 46.0 | 38 | 46 | ..... | N N E | 106 | 2 | Fair. |
| 31 | 29.853 | 54.0 | 48.6 | 67.5 | 39.0 | 89 | 41 | ..... | E N E | 90 | 4 | Fair. |
| Mean or Sum | 29.732 | 52.5 | 49.1 | 61.8 | 43.3 | 77.5 | 43.2 | 1.19 | N 54° E | 3234 | 7.0 | |

Moon's Phases, &c.

7^d 16^h Apogee.

8 14 Full.

16 11 Last Quarter.

22^d 8^h Perigee.

23 2 New.

30 1 First Quarter.

| | | | | | |
|-----|-----|--------------------------------------|-----|-----|---------------------------------------|
| Day | h. | | Day | h. | |
| 9 | ... | Apple in blossom. | 15 | 10 | Thunder storm, which lasted till mid- |
| 11 | 8 | Lightning (thunder said to have been | | | night. |
| | | heard.) | 18 | ... | Lilac in blossom. |
| 14 | 10 | Lightning after this time. | | | |

JUNE, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-Registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|--------|---------|-----------------|----------------|---------------------|--------------------|
| | | | | Shade. | | Sun. | Grass. | | Direc- tion. | Hor. Motion | | |
| | | Air. | Evap. | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.736 | 53.8 | 48.9 | 65.0 | 39.5 | 80 | 42 | ..... | E | 69 | 6 | Fair. |
| 2 | 29.680 | 55.8 | 53.0 | 64.0 | 49.5 | 74 | 48 | 0.08 | S | 66 | 6 | Showery. |
| 3 | 29.834 | 59.8 | 56.4 | 69.0 | 53.5 | 86 | 52 | .14 | S W | 117 | 9 | Fair; showery. |
| 4 | 29.890 | 62.9 | 57.0 | 73.0 | 53.0 | 85 | 51 | ..... | S S W | 94 | 5 | Fair. |
| 5 | 29.820 | 67.9 | 60.5 | 79.0 | 59.0 | 91 | 58 | ..... | W S W | 72 | 7 | Fair; thunder. |
| 6 | 29.755 | 66.2 | 61.8 | 74.5 | 57.5 | 95 | 58 | .60 | N N E | 52 | 10 | Fair; showery. |
| 7 | 29.495 | 59.2 | 56.0 | 68.5 | 53.0 | 77 | 50 | .02 | S W | 172 | 6 | Dull; variable. |
| 8 | 29.556 | 56.7 | 52.7 | 64.0 | 51.5 | 80 | 51 | ..... | S W | 236 | 6 | Fair. |
| 9 | 29.436 | 54.2 | 51.3 | 63.0 | 46.5 | 76 | 46 | .15 | S W | 146 | 10 | Showery. |
| 10 | 29.488 | 55.9 | 51.6 | 63.5 | 46.5 | 85 | 46 | ..... | W S W | 160 | 7 | Fair; showery. |
| 11 | 29.860 | 52.7 | 47.3 | 63.5 | 42.0 | 79 | 42 | ..... | N N W | 85 | 5 | Fair. |
| 12 | 30.064 | 53.2 | 48.5 | 63.0 | 40.0 | 86 | 42 | ..... | E N E | 42 | 4 | Fair. |
| 13 | 30.003 | 56.3 | 48.9 | 66.5 | 38.5 | 87 | 40 | ..... | E S E | 47 | 3 | Fair. |
| 14 | 29.791 | 55.9 | 49.6 | 66.5 | 43.5 | 88 | 43 | ..... | E N E | 120 | 2 | Fine. |
| 15 | 29.743 | 54.7 | 48.8 | 65.5 | 42.0 | 86 | 42 | ..... | N E | 174 | 1 | Fine. |
| 16 | 29.825 | 54.3 | 50.4 | 63.0 | 50.5 | 85 | 49 | .10 | N N E | 164 | 10 | Fair; thunder. |
| 17 | 29.964 | 57.0 | 51.9 | 68.0 | 44.5 | 86 | 45 | ..... | N N E | 170 | 6 | Fair. |
| 18 | 29.951 | 56.3 | 53.0 | 64.5 | 49.0 | 85 | 48 | ..... | N N E | 222 | 4 | Fair; damp. |
| 19 | 29.774 | 64.5 | 62.5 | 78.0 | 60.0 | 95 | 57 | .19 | E N E | 134 | 7 | Fair; thunder. |
| 20 | 29.738 | 69.0 | 64.0 | 81.0 | 60.0 | 97 | 60 | .80 | S S E | 45 | 7 | Cloudy; thunder. |
| 21 | 29.848 | 62.7 | 60.0 | 74.0 | 55.5 | 94 | 56 | .04 | N W | 53 | 9 | Variable; thunder. |
| 22 | 29.980 | 66.3 | 62.3 | 76.0 | 55.5 | 95 | 54 | ..... | N N W | 31 | 7 | Fair. |
| 23 | 30.035 | 69.6 | 63.4 | 80.5 | 57.0 | 103 | 56 | ..... | E N E | 39 | 2 | Fair; oppressive. |
| 24 | 30.126 | 67.0 | 59.2 | 80.0 | 52.0 | 107 | 52 | ..... | E | 51 | 0 | Very fine. |
| 25 | 30.168 | 68.3 | 59.4 | 82.0 | 52.0 | 106 | 52 | ..... | E N E | 41 | 0 | Very fine. |
| 26 | 30.012 | 68.6 | 61.5 | 81.0 | 54.0 | 107 | 53 | ..... | E N E | 33 | 0 | Fine. |
| 27 | 29.797 | 70.9 | 62.4 | 84.0 | 55.0 | 106 | 54 | ..... | S S W | 42 | 2 | Fine. |
| 28 | 29.558 | 69.0 | 62.1 | 85.0 | 60.0 | 104 | 59 | ..... | S W | 93 | 8 | Fair; fall. |
| 29 | 29.380 | 62.7 | 57.8 | 73.5 | 57.5 | 85 | 56 | .06 | S S W | 115 | 8 | Fair; showery. |
| 30 | 29.405 | 59.4 | 57.3 | 67.5 | 56.0 | 76 | 56 | 0.86 | W N W | 56 | 10 | Showery; thunder. |
| Mean or Sum | 29.790 | 61.0 | 56.0 | 71.5 | 50.8 | 89.9 | 50.3 | 3.04 | N 59° E | 2941 | 5.6 | |

Moon's Phases, &c.

4^d 0^h Apogee.19^d 14^h Perigee.

7 5 Full.

21 10 New.

14 19 Last Quarter.

28 16 First Quarter.

| Day | h | | Day | h | |
|-----|----|-------------------------------------------------------|-----|----|-------------------------------------------------|
| 5 | 11 | Distant thunder, and lightning till 12 ^h . | 30 | 12 | Thunder storm with rain and hail, which |
| 16 | 3 | Rain; distant thunder. | | | lasted 30 ^m . During this time there |
| 19 | 7 | Thunder and lightning; and at 13 ^h . | | | were four claps of thunder, accom- |
| 20 | 8 | Calm; heat oppressive; thunder storms | | | panied by lightning; 0.52 inch of rain |
| | | at 8 ^h and at 12 ^h . | | | fell. The hail stones were cone-shaped; |
| 21 | 5 | Thunder and rain. | | | the rain was remarked as being very |
| | | | | | white. |

JULY, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|--------|---------|-----------------|----------------|------------------------|-----------------------|
| | | Air. | Evap. | Shade. | | Sun. | Grass. | | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | Miles. | | | |
| 1 | 29.742 | 55.1 | 51.9 | 61.0 | 49.0 | 68 | 50 | ..... | N N E | 136 | 10 | Showery; cloudy. |
| 2 | 29.818 | 60.8 | 55.0 | 67.5 | 56.0 | 85 | 55 | ..... | W S W | 52 | 9 | Fair. |
| 3 | 29.682 | 59.2 | 56.4 | 66.0 | 56.0 | 71 | 55 | 0.34 | S S W | 110 | 10 | Overcast; rain. |
| 4 | 29.604 | 60.6 | 58.0 | 66.5 | 54.0 | 65 | 52 | .36 | S W | 85 | 10 | Rain; fair. |
| 5 | 29.458 | 59.5 | 57.1 | 67.5 | 52.0 | 77 | 53 | .45 | W S W | 95 | 9 | Fair; rain. |
| 6 | 29.589 | 55.1 | 51.7 | 62.0 | 49.5 | 80 | 49 | .17 | W | 150 | 6 | Variable; thunder. |
| 7 | 29.754 | 55.0 | 50.3 | 62.0 | 45.5 | 73 | 43 | ..... | W | 116 | 7 | Fair; cloudy. |
| 8 | 29.736 | 56.6 | 51.6 | 64.0 | 48.0 | 69 | 45 | ..... | W S W | 117 | 7 | Fair; starlight. |
| 9 | 29.714 | 60.3 | 55.3 | 68.0 | 50.5 | 81 | 50 | ..... | W | 101 | 8 | Fair. |
| 10 | 29.776 | 64.5 | 59.3 | 71.0 | 58.0 | 81 | 57 | ..... | W S W | 150 | 9 | Fair; fall. |
| 11 | 29.973 | 63.6 | 59.5 | 70.5 | 56.0 | 86 | 55 | ..... | W S W | 134 | 4 | Fair; cloudy. |
| 12 | 30.098 | 65.9 | 61.7 | 76.0 | 55.0 | 97 | 54 | ..... | S W | 105 | 6 | Fine; cloudy night. |
| 13 | 30.123 | 65.8 | 60.7 | 75.0 | 56.0 | 95 | 56 | ..... | W S W | 81 | 6 | Fine. |
| 14 | 29.986 | 67.8 | 60.7 | 80.0 | 54.0 | 98 | 54 | ..... | W S W | 43 | 2 | Fine. |
| 15 | 29.724 | 65.5 | 59.4 | 78.0 | 54.0 | 102 | 54 | ..... | W | 115 | 6 | Fair. |
| 16 | 29.747 | 59.9 | 55.6 | 70.5 | 49.0 | 91 | 51 | .03 | W S W | 115 | 7 | Fair; fall. |
| 17 | 29.933 | 64.3 | 58.8 | 73.5 | 55.5 | 95 | 54 | ..... | W S W | 128 | 9 | Fair. |
| 18 | 29.990 | 65.5 | 61.6 | 75.0 | 56.0 | 81 | 56 | ..... | W S W | 103 | 6 | Fair. |
| 19 | 29.817 | 69.6 | 62.7 | 80.0 | 59.5 | 92 | 58 | ..... | S S W | 94 | 5 | Fair. |
| 20 | 29.833 | 65.6 | 56.9 | 76.0 | 57.0 | 98 | 51 | ..... | W N W | 164 | 5 | Fair. |
| 21 | 29.797 | 64.3 | 60.8 | 69.5 | 61.0 | 80 | 59 | ..... | W S W | 224 | 10 | Overcast; fall. |
| 22 | 29.781 | 67.0 | 62.5 | 74.0 | 61.5 | 86 | 61 | ..... | W S W | 131 | 9 | Variable. |
| 23 | 29.735 | 65.2 | 61.5 | 75.0 | 58.5 | 94 | 57 | ..... | W S W | 176 | 6 | Thin clouds. |
| 24 | 29.588 | 67.6 | 61.6 | 80.0 | 61.0 | 97 | 59 | 0.03 | W S W | 186 | 8 | Fair. |
| 25 | 29.712 | 61.2 | 55.6 | 71.0 | 49.5 | 91 | 49 | ..... | S W | 155 | 4 | Fall; fair. |
| 26 | 29.744 | 63.0 | 57.2 | 70.0 | 57.0 | 88 | 56 | ..... | S W | 142 | 5 | Dull; fair. |
| 27 | 29.671 | 64.8 | 61.7 | 76.0 | 58.0 | 94 | 59 | 1.79 | S W | 105 | 10 | Fall; rain; lightning |
| 28 | 29.885 | 60.6 | 55.1 | 71.0 | 48.0 | 87 | 51 | ..... | S W | 90 | 3 | Rain; fair. |
| 29 | 29.860 | 63.9 | 58.4 | 74.5 | 53.0 | 95 | 53 | ..... | S W | 66 | 6 | Fair. |
| 30 | 29.821 | 65.8 | 61.9 | 71.5 | 61.0 | 86 | 60 | ..... | W S W | 187 | 8 | Fair. |
| 31 | 29.860 | 66.5 | 61.4 | 74.0 | 60.0 | 94 | 59 | ..... | W S W | 165 | 3 | Fair. |
| Mean or Sum | 29.792 | 62.9 | 58.1 | 71.5 | 54.6 | 86.4 | 54.0 | 3.17 | S 62° W | 3821 | 6.8 | |

Moon's Phases, &c.

1^d 14^h Apogee.

6 19 Fall.

14 1 Last Quarter.

17^d 7^h Perigee.

20 18 New.

28^d 9^h First Quarter.

29 7 Apogee.

Day h.

5 1

Rain all day, except from 5^h to 6^h. Vivid lightning after 9^h, with distant thunder. First indications of the potato blight. Thunder storm. Summer lightning.

Day h.

27 5

Distant thunder and rain; lightning seen several times during the evening. Heavy rain at intervals throughout the day. Harvest begun.

29 ...

AUGUST, 1857

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|--------|---------|------------------|----------------|---------------------|--------------------|
| | | Air. | Evap. | Shade. | | Sun. | Glass. | | Dirrec- tion. | Hor. Motion | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.875 | 66.5 | 62.6 | 75.5 | 59.5 | 87 | 58 | ..... | W S W | 107 | 8 | Fair; overcast. |
| 2 | 29.867 | 66.3 | 62.3 | 78.0 | 57.0 | 91 | 56 | ..... | S W | 56 | 5 | Fair; starlight. |
| 3 | 29.700 | 70.0 | 63.7 | 82.0 | 60.0 | 95 | 59 | ..... | S | 68 | 4 | Fair. |
| 4 | 29.727 | 66.1 | 62.2 | 76.0 | 58.0 | 98 | 59 | ..... | W | 76 | 9 | Cloudy; showers. |
| 5 | 29.596 | 63.9 | 59.1 | 73.5 | 58.0 | 93 | 58 | 0.57 | N W | 70 | 9 | Fair; rain. |
| 6 | 29.511 | 56.6 | 54.6 | 67.5 | 52.5 | 85 | 53 | .13 | N W | 70 | 10 | Rain; showers. |
| 7 | 29.469 | 55.2 | 54.1 | 59.0 | 53.0 | 68 | 53 | .74 | W | 82 | 10 | Rain. |
| 8 | 29.532 | 57.2 | 56.1 | 61.5 | 54.0 | 68 | 54 | .24 | W | 86 | 10 | Showery. |
| 9 | 29.766 | 57.7 | 55.9 | 66.0 | 49.0 | 85 | 50 | .22 | W N W | 42 | 5 | Showery; thunder. |
| 10 | 29.913 | 64.8 | 61.5 | 72.0 | 60.0 | 95 | 57 | .03 | W S W | 52 | 8 | Fine; damp. |
| 11 | 29.939 | 61.2 | 61.9 | 74.0 | 56.5 | 85 | 56 | ..... | W S W | 58 | 4 | Fall; starlight. |
| 12 | 29.827 | 66.8 | 63.1 | 76.0 | 58.0 | 97 | 58 | .02 | S | 32 | 5 | Fine. |
| 13 | 29.569 | 66.0 | 62.4 | 77.0 | 58.5 | 87 | 60 | .62 | W N W | 80 | 10 | Rain; thunder. |
| 14 | 29.537 | 58.6 | 56.3 | 68.5 | 50.5 | 81 | 50 | .95 | W | 83 | 10 | Overcast; thunder. |
| 15 | 29.647 | 62.9 | 56.2 | 72.0 | 56.0 | 85 | 56 | .16 | N N W | 74 | 7 | Cloudy; rain. |
| 16 | 29.757 | 65.9 | 59.2 | 77.0 | 56.5 | 100 | 56 | ..... | N | 155 | 3 | Fine. |
| 17 | 29.861 | 59.9 | 56.8 | 70.0 | 49.0 | 95 | 50 | ..... | N | 80 | 2 | Fine. |
| 18 | 29.933 | 61.5 | 58.1 | 68.0 | 56.5 | 83 | 56 | ..... | N N W | 55 | 10 | Fair; overcast. |
| 19 | 29.956 | 62.5 | 62.9 | 73.5 | 61.0 | 97 | 63 | ..... | N N E | 90 | 9 | Fair; overcast. |
| 20 | 29.953 | 62.5 | 58.0 | 73.0 | 56.0 | 94 | 56 | ..... | N N E | 170 | 8 | Fair; overcast. |
| 21 | 29.851 | 63.5 | 59.3 | 70.0 | 60.0 | 96 | 51 | ..... | N E | 100 | 7 | Fair; overcast. |
| 22 | 29.693 | 68.3 | 63.2 | 77.5 | 58.0 | 95 | 58 | ..... | E N E | 64 | 3 | Fair; starlight. |
| 23 | 29.553 | 71.9 | 65.1 | 82.5 | 61.5 | 103 | 60 | ..... | E N E | 66 | 5 | Fair; oppressive. |
| 24 | 29.653 | 70.4 | 65.0 | 83.0 | 60.0 | 99 | 59 | ..... | S E | 36 | 5 | Fair; starlight. |
| 25 | 29.909 | 63.9 | 59.3 | 76.0 | 57.0 | 99 | 54 | ..... | S W | 63 | 2 | Fine. |
| 26 | 30.108 | 67.3 | 53.1 | 75.0 | 52.0 | 103 | 52 | ..... | W S W | 34 | 0 | Fine. |
| 27 | 30.098 | 60.0 | 55.0 | 73.0 | 48.0 | 97 | 48 | ..... | N N W | 38 | 1 | Fair. |
| 28 | 30.054 | 60.0 | 56.0 | 68.0 | 53.0 | 94 | 52 | ..... | N N E | 102 | 10 | Fair; drizzle. |
| 29 | 29.905 | 61.1 | 58.3 | 68.5 | 56.0 | 81 | 51 | ..... | N E | 104 | 6 | Dull; starlight. |
| 30 | 29.786 | 63.0 | 57.8 | 70.0 | 51.0 | 98 | 51 | ..... | E | 32 | 0 | Fine. |
| 31 | 29.743 | 63.5 | 60.8 | 70.5 | 58.5 | 103 | 58 | ..... | S | 35 | 7 | Fair. |
| Mean or Sum | 29.786 | 63.0 | 59.5 | 73.1 | 55.8 | 91.5 | 55.6 | 3.68 | SSW | 2266 | 6.2 | |

Moon's Phases, &c.

5^d 6^h Full.

12 3 Perigee.

... 6 East Quarter.

19^d 4^h New.

26 2 Apogee.

27 3 First Quarter.

Day h.

9 4 Thunder storm.

12 .. Many shooting stars.

Day h.

13 6 Thunder storm, lasted till 10 $\frac{1}{2}$.14 4 Thunder storm, lasted till 7 $\frac{1}{2}$.

SEPTEMBER, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Wind. | | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|--------|-------------------------------------|------|------|--------|---------|-----------------|----------------|---------------------|------------------|
| | | Air. | E vap. | Shade. | | Sun. | Grass. | Rain. | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.583 | 61.7 | 56.1 | 70.5 | 52.0 | 86 | 52 | 0.04 | W | 120 | 10 | Fair; variable. |
| 2 | 29.369 | 52.5 | 49.7 | 59.5 | 47.5 | 73 | 48 | 1.10 | W S W | 105 | 7 | Showery. |
| 3 | 29.323 | 53.4 | 52.3 | 58.0 | 49.5 | 58 | 50 | 0.03 | S E | 49 | 10 | Showery. |
| 4 | 29.429 | 55.0 | 52.2 | 63.0 | 48.0 | 74 | 48 | ..... | S W | 39 | 6 | Fair. |
| 5 | 29.612 | 58.6 | 56.0 | 66.0 | 53.0 | 82 | 51 | ..... | S S W | 60 | 9 | Fair. |
| 6 | 29.678 | 61.2 | 57.4 | 69.5 | 54.0 | 84 | 52 | .09 | W S W | 64 | 8 | Fair. |
| 7 | 29.532 | 60.9 | 58.4 | 68.5 | 57.0 | 93 | 56 | .03 | S | 53 | 8 | Rain; fair. |
| 8 | 29.295 | 56.7 | 55.6 | 64.0 | 51.0 | 64 | 50 | .73 | S S W | 52 | 10 | Rain. |
| 9 | 29.387 | 61.0 | 58.9 | 67.0 | 57.0 | 78 | 57 | .42 | S | 81 | 9 | Fair; rain. |
| 10 | 29.463 | 60.0 | 56.0 | 68.0 | 55.5 | 91 | 55 | .03 | S W | 46 | 8 | Fair; overcast. |
| 11 | 29.418 | 57.7 | 55.6 | 63.0 | 52.5 | 74 | 51 | .05 | W S W | 84 | 9 | Drizzle. |
| 12 | 29.558 | 59.5 | 57.5 | 67.5 | 54.0 | 90 | 53 | .06 | S | 42 | 9 | Fair; overcast. |
| 13 | 29.773 | 60.4 | 58.1 | 67.0 | 56.0 | 85 | 55 | .22 | W S W | 43 | 5 | Fair; starlight. |
| 14 | 29.914 | 62.2 | 61.1 | 67.0 | 58.0 | 71 | 56 | .35 | S S E | 36 | 7 | Showery. |
| 15 | 30.021 | 64.8 | 62.2 | 70.0 | 61.0 | 78 | 61 | ..... | S | 63 | 9 | Overcast. |
| 16 | 30.031 | 62.5 | 59.6 | 72.5 | 50.0 | 89 | 52 | ..... | S S W | 39 | 2 | Fair. |
| 17 | 30.021 | 64.3 | 60.5 | 76.0 | 54.0 | 98 | 54 | ..... | W S W | 70 | 2 | Fine. |
| 18 | 30.121 | 56.7 | 53.4 | 69.5 | 48.5 | 88 | 49 | ..... | N | 63 | 6 | Fine; starlight. |
| 19 | 30.222 | 54.1 | 51.3 | 60.5 | 50.0 | 64 | 50 | ..... | N N E | 77 | 10 | Overcast. |
| 20 | 30.143 | 54.2 | 51.2 | 65.5 | 45.0 | 87 | 48 | ..... | N E | 46 | 1 | Dull; fair. |
| 21 | 30.054 | 58.2 | 54.9 | 64.0 | 54.0 | 85 | 52 | ..... | N E | 90 | 8 | Fair. |
| 22 | 29.968 | 57.6 | 54.3 | 62.0 | 54.5 | 77 | 54 | ..... | N E | 93 | 9 | Overcast. |
| 23 | 29.754 | 57.0 | 54.2 | 65.5 | 49.0 | 82 | 48 | ..... | E | 72 | 3 | Fair. |
| 24 | 29.615 | 61.6 | 60.2 | 68.5 | 53.5 | 81 | 56 | .20 | S S E | 68 | 8 | Fair; showery. |
| 25 | 29.698 | 55.7 | 53.8 | 67.5 | 45.0 | 87 | 46 | .35 | N W | 49 | 9 | Fair; rain. |
| 26 | 29.672 | 59.4 | 56.2 | 64.0 | 55.5 | 87 | 52 | .02 | S W | 100 | 9 | Fair. |
| 27 | 29.624 | 59.6 | 57.7 | 67.5 | 56.0 | 77 | 56 | .16 | S W | 83 | 9 | Dull; rain. |
| 28 | 29.778 | 53.1 | 50.9 | 65.0 | 43.0 | 77 | 46 | ..... | W S W | 60 | 4 | Fair. |
| 29 | 29.877 | 55.0 | 52.9 | 63.5 | 47.0 | 85 | 47 | ..... | S | 39 | 4 | Fair. |
| 30 | 29.802 | 55.7 | 53.9 | 66.0 | 49.5 | 79 | 48 | 0.01 | S S E | 45 | 9 | Fog; fair. |
| Mean or Sum | 29.724 | 58.3 | 55.7 | 66.2 | 52.2 | 80.8 | 51.8 | 3.89 | S 26 W | 1936 | 7.2 | |

Moon's Phases, &c.

3^d 17^h Full.17^d 18^h New.

7 1 Perigee.

22 21 Apogee.

10 11 Last Quarter.

25 21 First Quarter.

OCTOBER, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|------|---------|-----------------|----------------|---------------------|------------------|
| | | Air. | Evap. | Shade. | | Sun. | | | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.923 | 57.7 | 55.7 | 66.0 | 50.5 | 87 | 50 | ..... | S W | 95 | 3 | Fog; fine. |
| 2 | 29.868 | 59.4 | 55.9 | 65.0 | 54.5 | 86 | 52 | ..... | W S W | 159 | 8 | Fair. |
| 3 | 29.642 | 56.9 | 55.0 | 63.0 | 44.5 | 76 | ... | 0.28 | W S W | 112 | 10 | Overcast. |
| 4 | 29.485 | 45.3 | 44.7 | 50.0 | 36.5 | 58 | 41 | .51 | N | 44 | 4 | Rain; cloudy. |
| 5 | 29.477 | 47.8 | 45.4 | 56.0 | 41.0 | 80 | 40 | ..... | S W | 107 | 4 | Fair. |
| 6 | 29.442 | 50.0 | 47.3 | 57.0 | 43.0 | 80 | 40 | ..... | S W | 81 | 5 | Fog; fair. |
| 7 | 28.821 | 53.7 | 51.6 | 58.0 | 49.0 | 60 | 48 | .39 | S E | 164 | 10 | Overcast. |
| 8 | 28.902 | 49.4 | 48.2 | 54.5 | 44.5 | 59 | 45 | .51 | W N W | 144 | 7 | Rain; starlight. |
| 9 | 29.397 | 50.4 | 47.9 | 54.5 | 44.0 | 59 | 44 | .21 | W | 190 | 7 | Rain; cloudy. |
| 10 | 29.636 | 53.6 | 51.6 | 59.0 | 48.5 | 72 | 49 | .31 | W S W | 82 | 10 | Fair; rain. |
| 11 | 29.842 | 59.3 | 57.8 | 62.0 | 55.5 | 61 | 55 | .01 | S W | 32 | 10 | Foggy. |
| 12 | 29.988 | 59.8 | 58.1 | 64.0 | 56.5 | 70 | 56 | ..... | S S W | 52 | 10 | Fog; overcast. |
| 13 | 30.011 | 55.7 | 54.1 | 63.5 | 45.5 | 91 | 47 | ..... | S S W | 23 | 7 | Overcast. |
| 14 | 29.908 | 51.3 | 49.6 | 61.5 | 44.5 | 68 | 44 | ..... | N E | 48 | 4 | Fair. |
| 15 | 29.843 | 54.1 | 52.7 | 56.0 | 49.5 | 78 | 52 | ..... | N E | 23 | 10 | Overcast; foggy. |
| 16 | 29.752 | 54.9 | 53.8 | 60.0 | 49.5 | 87 | 50 | ..... | N E | 38 | 4 | Foggy. |
| 17 | 29.583 | 55.8 | 53.9 | 61.0 | 52.0 | 70 | 52 | .27 | S S E | 49 | 10 | Variable. |
| 18 | 29.313 | 54.2 | 53.0 | 58.0 | 50.0 | 52 | 51 | .34 | E N E | 89 | 10 | Rain. |
| 19 | 29.581 | 51.4 | 50.3 | 60.0 | 43.0 | 77 | 47 | .01 | E N E | 61 | 7 | Fog; fair. |
| 20 | 29.623 | 53.8 | 52.4 | 60.0 | 43.0 | 77 | 48 | ..... | N N E | 50 | 9 | Foggy; fair. |
| 21 | 29.504 | 48.4 | 46.0 | 56.0 | 43.5 | 71 | 43 | .04 | N N W | 78 | 10 | Foggy. |
| 22 | 29.581 | 45.6 | 44.8 | 48.0 | 43.0 | 49 | 44 | 1.54 | N | 182 | 10 | Dull; rain. |
| 23 | 29.890 | 49.8 | 48.3 | 55.0 | 45.0 | 55 | 44 | .02 | N N E | 101 | 10 | Rain; cloudy. |
| 24 | 29.850 | 55.8 | 53.1 | 60.0 | 48.0 | 76 | 50 | ..... | E N E | 148 | 8 | Fair. |
| 25 | 29.681 | 51.4 | 50.3 | 59.0 | 44.0 | 72 | 46 | .01 | E N E | 59 | 10 | Dull; fog. |
| 26 | 29.560 | 52.7 | 51.4 | 56.0 | 47.0 | 72 | 46 | .02 | E N E | 41 | 10 | Variable. |
| 27 | 29.660 | 52.6 | 51.2 | 59.0 | 45.5 | 66 | 46 | ..... | S S E | 79 | 4 | Overcast; fall. |
| 28 | 29.792 | 49.8 | 48.3 | 59.5 | 43.5 | 78 | 43 | ..... | S W | 66 | 2 | Thin fog. |
| 29 | 29.631 | 50.9 | 48.7 | 56.0 | 45.0 | 68 | 45 | .09 | W S W | 100 | 9 | Variable. |
| 30 | 29.808 | 44.0 | 41.9 | 53.5 | 34.0 | 70 | 37 | ..... | W S W | 103 | 4 | Fall; fair. |
| 31 | 29.842 | 51.9 | 50.0 | 55.0 | 46.0 | 72 | 46 | .01 | S | 76 | 9 | Fair. |
| Mean or Sum | 29.640 | 52.5 | 50.7 | 58.3 | 46.1 | 70.9 | 45.6 | 4.57 | S 46° W | 2676 | 7.6 | |

Moon's Phases, &c.

3^d 3^h Full.

4 20 Perigee.

9 18 Last Quarter.

17^d 10^h New.

20 13 Apogee.

25 14 First Quarter.

| | | |
|-----|----|-------------|
| Day | h. | |
| 5 | 11 | Lunar halo. |

| | | |
|-----|----|-------------|
| Day | h. | |
| 29 | 8 | Lunar halo. |

NOVEMBER, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|--------|---------|-----------------|----------------|---------------------|----------------------|
| | | Air. | Evap. | Shade. | | Sun. | Grass. | | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.547 | 52.4 | 50.4 | 57.5 | 47.5 | 69 | 46 | 0.04 | SSE | 64 | 5 | Fair. |
| 2 | 29.480 | 58.0 | 56.5 | 60.0 | 49.0 | 59 | 53 | .01 | SSE | 51 | 10 | Foggy; fall. |
| 3 | 29.609 | 52.1 | 51.2 | 61.0 | 48.0 | 63 | 49 | .82 | E | 125 | 10 | Dull; rain. |
| 4 | 29.656 | 52.3 | 51.9 | 54.5 | 50.0 | 63 | 50 | .27 | ENE | 55 | 10 | Dull; rain. |
| 5 | 29.695 | 56.4 | 55.5 | 60.5 | 53.0 | 65 | 52 | ..... | ENE | 39 | 9 | Damp. |
| 6 | 29.911 | 49.8 | 48.9 | 58.0 | 42.0 | 63 | 45 | ..... | E | 27 | 10 | Foggy; starlight. |
| 7 | 30.086 | 45.0 | 44.6 | 52.5 | 40.0 | 70 | 46 | .02 | NE | 45 | 7 | Fine; foggy. |
| 8 | 30.156 | 45.2 | 44.7 | 49.0 | 39.0 | 61 | 44 | .01 | NNE | 22 | 7 | Foggy; fair. |
| 9 | 30.203 | 49.0 | 48.4 | 50.5 | 46.5 | 51 | 47 | ..... | NNE | 72 | 10 | Damp; fog. |
| 10 | 30.399 | 47.8 | 46.0 | 51.0 | 41.5 | 52 | 41 | ..... | NNE | 94 | 7 | Overcast. |
| 11 | 30.537 | 39.8 | 39.1 | 52.0 | 33.0 | 79 | 37 | .02 | ENE | 59 | 9 | Fair; foggy. |
| 12 | 30.467 | 36.6 | 36.8 | 41.5 | 30.0 | 68 | 34 | .01 | ENE | 43 | 10 | Damp fog. |
| 13 | 30.235 | 41.4 | 41.2 | 45.0 | 34.5 | 44 | 37 | ..... | ENE | 24 | 10 | Overcast; foggy. |
| 14 | 30.101 | 48.0 | 46.8 | 50.5 | 41.5 | 51 | 40 | .02 | NE | 91 | 7 | Cloudy; fall. |
| 15 | 30.082 | 44.8 | 43.1 | 49.0 | 42.0 | 71 | 50 | ..... | NNE | 113 | 6 | Fine; overcast. |
| 16 | 29.986 | 45.4 | 44.2 | 50.0 | 37.5 | 50 | 39 | .01 | NE | 94 | 9 | Overcast. |
| 17 | 29.988 | 46.7 | 45.0 | 50.0 | 40.5 | 58 | 40 | ..... | NE | 61 | 7 | Variable; starlight. |
| 18 | 30.053 | 44.9 | 42.9 | 55.0 | 39.5 | 74 | 39 | ..... | ENE | 79 | 3 | Very fine. |
| 19 | 30.084 | 43.2 | 42.9 | 46.0 | 40.5 | 43 | 41 | ..... | ENE | 37 | 10 | Overcast. |
| 20 | 30.133 | 46.1 | 45.8 | 50.0 | 41.5 | 53 | 43 | .01 | WNW | 36 | 10 | Foggy. |
| 21 | 30.062 | 48.3 | 47.3 | 52.0 | 42.0 | 54 | 41 | ..... | SW | 76 | 9 | Overcast. |
| 22 | 29.624 | 49.4 | 47.9 | 55.0 | 45.0 | 63 | 43 | .02 | WSW | 125 | 10 | Fair. |
| 23 | 29.175 | 45.8 | 44.6 | 50.0 | 41.5 | 63 | 42 | .02 | W | 99 | 7 | Variable. |
| 24 | 29.248 | 39.2 | 38.0 | 47.0 | 32.5 | 63 | 35 | .24 | NNE | 58 | 4 | Fair. |
| 25 | 29.405 | 37.2 | 36.4 | 40.0 | 33.5 | 41 | 35 | .02 | ENE | 78 | 10 | Snow; damp. |
| 26 | 29.585 | 41.1 | 39.8 | 44.0 | 35.0 | 43 | 37 | .10 | SW | 162 | 7 | Cold damp. |
| 27 | 29.963 | 38.2 | 37.0 | 45.5 | 33.5 | 62 | 32 | ..... | ENE | 111 | 3 | Fine. |
| 28 | 29.982 | 36.8 | 35.8 | 45.0 | 31.0 | 62 | 31 | .01 | ENE | 46 | 6 | Fair; foggy. |
| 29 | 29.837 | 41.7 | 40.5 | 44.5 | 36.0 | 58 | 35 | ..... | ENE | 152 | 8 | Dull; fair. |
| 30 | 29.640 | 41.5 | 40.4 | 45.0 | 38.0 | 58 | 38 | 0.02 | E | 98 | 10 | Overcast. |
| Mean or Sum | 29.898 | 45.5 | 44.5 | 50.4 | 40.2 | 59.1 | 41.1 | 1.67 | N59°E | 2236 | 8.0 | |

Moon's Phases, &c.

| | |
|--------------------------------------|-----------------------------------------|
| 1 ^d 13 ^h Full. | 16 ^d 19 ^h Apogee. |
| 2 5 Perigee. | 24 6 First Quarter. |
| 8 5 Last Quarter. | 30 17 Perigee. |
| 16 4 New. | ... 22 Full. |

DECEMBER, 1857.

| Day. | Mean Barom. red. to 32°. | Mean Tempera- ture. | | Self-registering Ther- mometers. | | | | Rain. | Wind. | | Amount of Cloud. | Weather. |
|----------------|-----------------------------------|---------------------------|-------|-------------------------------------|------|------|--------|---------|-----------------|----------------|---------------------|------------------|
| | | Air. | Evap. | Shade. | | Sun. | Grass. | | Direc- tion. | Hor. Motion | | |
| | | | | Max. | Min. | Max. | Min. | | | | | |
| | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | | Miles. | | |
| 1 | 29.745 | 48.3 | 47.7 | 52.0 | 43.0 | 57 | 41 | 0.08 | S | 75 | 9 | Overcast; foggy. |
| 2 | 29.697 | 51.7 | 49.8 | 56.0 | 49.0 | 57 | 45 | ..... | S S W | 185 | 5 | Dull; fair. |
| 3 | 29.590 | 51.5 | 49.4 | 55.0 | 44.0 | 55 | 44 | .28 | W S W | 202 | 3 | Cloudy; stormy. |
| 4 | 29.892 | 42.3 | 41.1 | 50.0 | 37.0 | 69 | 38 | ..... | W S W | 73 | 0 | Very fine. |
| 5 | 30.072 | 45.1 | 44.0 | 50.5 | 39.5 | 67 | 38 | ..... | W S W | 82 | 4 | Fine. |
| 6 | 30.185 | 52.0 | 50.8 | 53.5 | 47.5 | 67 | 45 | ..... | W S W | 98 | 7 | Fair. |
| 7 | 30.322 | 45.9 | 44.9 | 55.0 | 34.0 | 57 | 37 | .01 | W | 134 | 7 | Overcast. |
| 8 | 30.352 | 43.6 | 43.1 | 45.5 | 35.5 | 53 | 38 | ..... | S W | 75 | 7 | Thick fog. |
| 9 | 30.138 | 45.4 | 44.0 | 47.0 | 43.5 | 46 | 41 | ..... | S S W | 104 | 10 | Overcast. |
| 10 | 30.254 | 45.5 | 45.0 | 52.5 | 37.5 | 65 | 37 | ..... | S W | 42 | 4 | Fine. |
| 11 | 30.435 | 40.5 | 39.8 | 46.0 | 34.0 | 63 | 34 | ..... | S W | 37 | 7 | Foggy; fair. |
| 12 | 30.457 | 44.0 | 42.6 | 44.5 | 39.0 | 45 | 40 | ..... | S W | 44 | 10 | Overcast. |
| 13 | 30.295 | 43.3 | 41.5 | 45.0 | 41.5 | 46 | 40 | ..... | S W | 59 | 10 | Overcast. |
| 14 | 30.011 | 45.2 | 43.4 | 48.5 | 42.0 | 45 | 40 | ..... | W S W | 108 | 10 | Overcast. |
| 15 | 29.903 | 49.4 | 48.1 | 51.0 | 47.5 | 51 | 44 | .01 | W S W | 117 | 10 | Overcast; damp. |
| 16 | 29.911 | 48.9 | 47.5 | 54.0 | 45.0 | 62 | 43 | ..... | W | 149 | 8 | Fair. |
| 17 | 29.961 | 51.9 | 50.1 | 54.0 | 49.0 | 64 | 45 | ..... | W | 194 | 9 | Fair. |
| 18 | 29.836 | 44.4 | 43.4 | 50.0 | 35.5 | 57 | 36 | .09 | W S W | 140 | 5 | Fair; rain. |
| 19 | 29.910 | 37.0 | 36.5 | 44.0 | 31.5 | 62 | 30 | ..... | W | 77 | 3 | Very fine. |
| 20 | 29.768 | 43.1 | 43.0 | 50.0 | 38.5 | 48 | 37 | 0.19 | W | 213 | 5 | Variable. |
| 21 | 29.910 | 51.0 | 48.8 | 52.0 | 48.0 | 57 | 45 | ..... | W | 355 | 10 | Overcast. |
| 22 | 30.073 | 52.6 | 50.8 | 53.5 | 50.0 | 58 | 48 | ..... | W | 320 | 10 | Cloudy. |
| 23 | 30.209 | 50.3 | 47.9 | 53.0 | 46.5 | 56 | 44 | ..... | W | 183 | 8 | Fair. |
| 24 | 30.145 | 49.3 | 46.6 | 51.0 | 46.0 | 61 | 43 | ..... | W | 187 | 9 | Fair. |
| 25 | 30.198 | 44.1 | 42.2 | 53.0 | 38.0 | 63 | 38 | ..... | W N W | 81 | 5 | Dull; fine. |
| 26 | 30.198 | 43.4 | 40.3 | 46.5 | 35.5 | 47 | 40 | ..... | N W | 37 | 10 | Cloudy. |
| 27 | 30.258 | 38.0 | 36.7 | 44.5 | 32.0 | 51 | 32 | ..... | N W | 39 | 8 | Fog; fair. |
| 28 | 30.313 | 43.1 | 42.3 | 45.0 | 38.5 | 48 | 37 | ..... | N W | 72 | 9 | Thick fog; fair. |
| 29 | 30.371 | 39.0 | 39.1 | 43.0 | 35.0 | 45 | 36 | ..... | W N W | 49 | 10 | Fog; overcast. |
| 30 | 30.375 | 38.6 | 38.3 | 43.0 | 31.0 | 45 | 35 | ..... | W S W | 61 | 10 | Foggy. |
| 31 | 30.317 | 36.6 | 35.8 | 38.5 | 31.0 | 49 | 31 | ..... | W S W | 43 | 5 | Fog; fair. |
| Mean or Sum | 30.100 | 45.3 | 44.0 | 49.3 | 40.2 | 55.4 | 39.4 | 0.66 | S 74° W | 3635 | 7.3 | |

Moon's Phases, &c.

7^d 19^h Last Quarter.23^d 19^h First Quarter.

13 20 Apogee.

29 5 Perigee.

15 23 New.

30 10 Full.

| Day h. | | Day h. | |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16 8 | A remarkable meteor was seen. It appeared first in the Zenith and descended eastward. Its size was apparently equal to that of the Moon; its colour, a pale blue. Its course when first seen was spiral, then, a tail shooting out, it | 17 16 | descended in a straight line and exploded at about 20° above the eastern horizon. At the time of its appearance the sky was partially covered with grey clouds. |
| | | 28 10 | Aurora Borealis. Lunar halo. |

SUMMARY OF THE RESULTS IN 1857.

| Month. | Barometer. | | | Thermometers. | | | | | | Rain. | | |
|------------|---------------|------------------|-----------------|---------------|------------------|-----------------|---------------|------------------|-----------------|---------------|------------------|-----------------|
| | | | | Dry. | | | Wet. | | | | | |
| | Normal Value. | Probable Excess. | Excess in 1857. | Normal Value. | Probable Excess. | Excess in 1857. | Normal Value. | Probable Excess. | Excess in 1857. | Normal Value. | Probable Excess. | Excess in 1857. |
| | Inches. | Inches. | Inches. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Inches. | Inches. | Inches. |
| January | 29.721 | ± .107 | — .132 | 37.7 | ± 2.6 | — 1.3 | 36.5 | ± 3.4 | — 0.4 | 1.99 | ± 0.75 | + 1.19 |
| February | .700 | .113 | + .191 | 38.6 | 2.4 | + 1.0 | 36.9 | 2.8 | + 1.1 | 1.83 | .69 | + 1.51 |
| March... | .690 | .118 | — .039 | 41.4 | 2.1 | + 0.4 | 38.7 | 2.1 | + 2.2 | 1.81 | .68 | — 0.27 |
| April | .700 | .110 | — .117 | 46.0 | 1.8 | — 0.5 | 42.6 | 1.7 | + 0.2 | 1.94 | .73 | + 0.08 |
| May | .733 | .085 | + .001 | 52.4 | 1.7 | + 0.1 | 49.0 | 1.7 | + 0.1 | 2.17 | .81 | — 0.98 |
| June | .725 | .059 | + .065 | 58.6 | 1.6 | + 2.4 | 55.2 | 1.7 | + 0.8 | 2.34 | .88 | + 0.70 |
| July | .721 | .047 | + .071 | 61.4 | 1.4 | + 1.5 | 57.7 | 1.4 | + 0.4 | 2.51 | .94 | + 0.66 |
| Aug. | .730 | .059 | + .056 | 59.7 | 1.3 | + 3.9 | 55.8 | 0.9 | + 3.7 | 2.63 | .99 | + 1.05 |
| Sept. | .718 | .084 | + .006 | 55.1 | 1.3 | + 3.2 | 51.6 | 0.9 | + 4.1 | 2.67 | 1.00 | + 1.22 |
| Oct..... | .684 | .104 | — .044 | 49.3 | 1.7 | + 3.2 | 46.8 | 1.5 | + 3.9 | 2.63 | 0.99 | + 1.94 |
| Nov. | .677 | .111 | + .221 | 43.5 | 2.1 | + 2.0 | 41.9 | 2.5 | + 2.6 | 2.47 | .93 | — 0.80 |
| Dec. | .707 | .107 | + .393 | 39.3 | 2.5 | + 6.0 | 38.0 | 3.4 | + 6.0 | 2.23 | .84 | — 1.57 |
| Year..... | 29.709 | ± .028 | + .056 | 48.6 | ± 0.6 | + 1.8 | 45.9 | ± 0.7 | + 2.1 | 27.22 | ± 3.09 | + 1.71 |
| Winter.. | .709 | .063 | + .051 | 38.5 | 1.4 | + 1.9 | 37.1 | 1.8 | + 2.2 | 6.05 | 1.32 | — 1.89 |
| Spring .. | .708 | .060 | — .052 | 46.6 | 1.1 | 0.0 | 43.4 | 1.1 | + 0.8 | 5.92 | 1.28 | — 1.17 |
| Summer | .725 | .032 | + .064 | 59.9 | 0.8 | + 2.6 | 56.2 | 0.8 | + 1.6 | 7.48 | 1.63 | + 2.41 |
| Autumn | .693 | .058 | + .061 | 49.3 | 1.0 | + 2.8 | 46.8 | 0.9 | + 3.5 | 7.77 | 1.69 | + 2.36 |

EXTREMES AND RANGE OF THE BAROMETER IN 1857.

| Month. | Normal Maximum. | Excess in 1857. | Normal Minimum. | Excess in 1857. | Normal Range. | Probable Excess. | Excess in 1857. |
|----------------|-----------------|-----------------|-----------------|-----------------|---------------|------------------|-----------------|
| | Inches. | Inches. | Inches. | Inches. | Inches. | Inches. | Inches. |
| January | 30.281 | — 0.078 | 28.966 | — 0.270 | 1.315 | ± 0.196 | + 0.192 |
| February | .350 | + .053 | 29.016 | + .221 | 1.334 | .241 | — .168 |
| March..... | .313 | + .075 | .087 | — .277 | 1.226 | .264 | + .352 |
| April | .228 | — .110 | .148 | — .395 | 1.080 | .213 | + .285 |
| May | .130 | — .054 | .201 | — .056 | 0.929 | .153 | + .002 |
| June | .032 | + .157 | .287 | + .021 | 0.745 | .120 | + .136 |
| July | .025 | + .137 | .324 | + .098 | 0.701 | .148 | + .039 |
| August | .165 | — .025 | .244 | + .206 | 0.921 | .195 | — .231 |
| September ... | .310 | — .078 | .063 | + .160 | 1.247 | .220 | — .238 |
| October | .294 | — .246 | 28.926 | — .286 | 1.368 | .227 | + .040 |
| November.... | .182 | + .403 | .903 | + .135 | 1.279 | .195 | + .268 |
| December | .173 | + .349 | .931 | + .561 | 1.242 | .180 | — .212 |

EXTREMES AND RANGE OF THERMOMETER IN 1857.

| Month. | Normal Max. | Excess in 1857. | Normal Min. | Excess in 1857. | Normal Monthly Range. | Probable Excess. | Excess in 1857. | Norm. Daily Range. | Probable Excess. | Excess in 1857. |
|------------|----------------|-----------------------|----------------|-----------------------|-----------------------------|---------------------|-----------------------|--------------------------|---------------------|-----------------------|
| | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. | Deg. |
| Jan. | 53.0 | - 2.5 | 22.2 | - 3.2 | 30.8 | + 4.4 | + 0.7 | 9.7 | + 1.0 | + 0.6 |
| Feb. | 54.0 | 0.0 | 22.8 | - 0.8 | 31.2 | 4.7 | + 0.8 | 11.8 | 1.6 | + 1.3 |
| March... | 59.0 | + 2.0 | 23.9 | + 2.1 | 35.1 | 4.6 | - 0.1 | 15.3 | 2.0 | - 2.1 |
| April | 65.9 | + 0.1 | 26.6 | + 0.9 | 39.3 | 4.1 | - 0.8 | 18.1 | 1.9 | - 3.1 |
| May | 72.7 | + 0.3 | 32.2 | - 1.7 | 40.5 | 3.7 | + 2.0 | 18.2 | 1.5 | + 0.3 |
| June | 78.0 | + 7.0 | 39.5 | - 1.0 | 38.5 | 3.6 | + 8.0 | 17.0 | 1.3 | + 3.7 |
| July | 80.6 | - 0.6 | 44.0 | + 1.5 | 36.6 | 3.7 | - 2.1 | 16.7 | 1.4 | + 0.2 |
| August.. | 78.6 | + 4.4 | 42.6 | + 5.4 | 36.0 | 3.6 | - 1.0 | 17.4 | 1.5 | - 0.1 |
| Sept. | 72.1 | + 3.9 | 36.6 | + 6.4 | 35.5 | 3.3 | - 2.5 | 16.7 | 1.5 | - 2.7 |
| October. | 64.6 | + 1.4 | 29.7 | + 4.3 | 34.9 | 3.1 | - 2.9 | 14.0 | 1.1 | - 1.8 |
| Nov. | 59.1 | + 1.9 | 24.9 | + 5.1 | 34.2 | 3.1 | - 3.2 | 11.1 | 0.7 | - 0.9 |
| Dec. | 55.1 | + 0.9 | 22.5 | + 8.5 | 32.6 | 3.7 | - 7.6 | 9.6 | 0.6 | - 0.5 |

DIRECTION AND INTENSITY OF THE WIND IN 1857, COMPARED WITH THE
VALUES DEDUCED FROM 25 YEARS' OBSERVATION.

| Month. | Direction of Wind, reckoned from N. towards E. | | | Intensity. | | $\frac{W}{E}$ | | $\frac{S}{N}$ | |
|-------------|---------------------------------------------------|-------|--------------------|------------|-------|---------------|-------|---------------|-------|
| | Normal. | 1857. | Excess in 1857. | Normal. | 1857. | Normal. | 1857. | Normal. | 1857. |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| January ... | 230 | 279 | + 49 | .167 | .279 | 1.49 | 9.00 | 1.42 | 0.83 |
| February .. | 242 | 190 | - 52 | .337 | .359 | 2.27 | 1.22 | 1.60 | 2.80 |
| March..... | 259 | 224 | - 35 | .147 | .158 | 1.56 | 1.67 | 1.04 | 2.00 |
| April | 342 | 205 | - 137 | .074 | .185 | 1.02 | 2.20 | 0.83 | 1.71 |
| May | 339 | 54 | + 75 | .078 | .249 | 1.06 | 0.54 | 0.81 | 0.71 |
| June | 244 | 59 | + 175 | .289 | .118 | 2.34 | 0.90 | 1.55 | 1.23 |
| July | 248 | 242 | - 6 | .383 | .800 | 3.12 | inf. | 1.74 | 9.00 |
| August | 247 | 267 | + 20 | .383 | .223 | 3.05 | 1.75 | 1.75 | 0.55 |
| September | 241 | 206 | - 35 | .191 | .206 | 1.68 | 2.17 | 1.26 | 2.43 |
| October.... | 239 | 226 | - 13 | .309 | .102 | 2.42 | 1.26 | 1.75 | 1.20 |
| November. | 222 | 59 | + 197 | .292 | .591 | 1.93 | 0.33 | 1.95 | 0.40 |
| December. | 227 | 254 | + 27 | .259 | .830 | 1.92 | inf. | 1.77 | 2.67 |
| Year..... | 244 | 238 | - 6 | .219 | .174 | 1.86 | 1.92 | 1.40 | 1.32 |

PRESSURE OF DRY AIR UNDER DIFFERENT WINDS.

| NORTH. | | | | | | NORTH EAST. | | | | | |
|------------|-------------|------------------|-------------------------------|-------------------------------|-------------|-------------|-------------|------------------|-------------------------------|-------------------------------|-------------|
| Mean Date. | Mean Barom. | Force of Vapour. | Reduction to Annual Pressure. | Mean Ann. Pressure of Dry Air | No. of Obs. | Mean Date. | Mean Barom. | Force of Vapour. | Reduction to Annual Pressure. | Mean Ann. Pressure of Dry Air | No. of Obs. |
| 1857. | Inches. | Inches. | Inches. | Inches. | | 1857. | Inches. | Inches. | Inches. | Inches. | |
| Jan. 17 | 29.64 | — .20 | — .09 | 29.35 | 10 | Jan. 16 | 29.25 | — .23 | — .09 | 28.93 | 3 |
| Feb. ... | ..... | ..... | ..... | ..... | ... | Feb. 8 | 29.89 | — .16 | — .08 | 29.65 | 4 |
| March 19 | 29.80 | — .21 | — .06 | 29.53 | 5 | March 11 | 30.06 | — .25 | — .06 | 29.75 | 4 |
| April 27 | 29.87 | — .19 | — .03 | 29.65 | 6 | April 26 | 29.82 | — .19 | — .03 | 29.60 | 6 |
| May 17 | 29.81 | — .30 | .00 | 29.51 | 7 | May 14 | 29.81 | — .27 | .00 | 29.54 | 16 |
| June 15 | 29.89 | — .37 | + .09 | 29.61 | 6 | June 17 | 29.92 | — .37 | + .09 | 29.64 | 11 |
| July 1 | 29.74 | — .36 | + .11 | 29.49 | 1 | July ... | ..... | ..... | ..... | ..... | ... |
| Aug. 20 | 29.91 | — .41 | + .08 | 29.58 | 8 | Aug. 23 | 29.85 | — .46 | + .07 | 29.46 | 7 |
| Sept. 18 | 30.12 | — .36 | + .04 | 29.80 | 2 | Sept. 20 | 30.10 | — .36 | + .04 | 29.78 | 4 |
| Oct. 18 | 29.62 | — .31 | + .02 | 29.33 | 5 | Oct. 20 | 29.70 | — .36 | + .02 | 29.36 | 10 |
| Nov. 13 | 30.02 | — .27 | .00 | 29.75 | 5 | Nov. 13 | 30.02 | — .28 | .00 | 29.74 | 17 |
| Dec. ... | ..... | ..... | ... | ..... | ... | Dec. ... | ... .. | ..... | ..... | ..... | ... |
| Mean ... | 29.820 | — .287 | .000 | 29.533 | 55 | Mean ... | 29.869 | — .303 | + .010 | 29.576 | 82 |
| EAST. | | | | | | SOUTH EAST. | | | | | |
| Mean Date. | Mean Barom. | Force of Vapour. | Reduction to Annual Pressure. | Mean Ann. Pressure of Dry Air | No. of Obs. | Mean Date. | Mean Barom. | Force of Vapour. | Reduction to Annual Pressure. | Mean Ann. Pressure of Dry Air | No. of Obs. |
| 1857. | Inches. | Inches. | Inches. | Inches. | | 1857. | Inches. | Inches. | Inches. | Inches. | |
| Jan. ... | ..... | ..... | ..... | ..... | ... | Jan. 31 | 29.66 | — .15 | — .08 | 29.43 | 1 |
| Feb. 12 | 29.84 | — .21 | — .08 | 29.55 | 4 | Feb. 16 | 29.83 | — .22 | — .08 | 29.53 | 2 |
| March 19 | 29.76 | — .27 | — .06 | 29.43 | 5 | March 19 | 29.68 | — .27 | — .06 | 29.35 | 4 |
| April 17 | 29.40 | — .22 | — .04 | 29.14 | 3 | April 11 | 29.55 | — .28 | — .04 | 29.23 | 7 |
| May 20 | 29.76 | — .34 | .00 | 29.42 | 4 | May 25 | 29.39 | — .36 | + .02 | 29.05 | 4 |
| June 17 | 29.97 | — .37 | + .09 | 29.69 | 9 | June 17 | 29.87 | — .38 | + .09 | 29.58 | 2 |
| July ... | ..... | ..... | ..... | ..... | ... | July ... | ..... | ..... | ..... | ..... | ... |
| Aug. 25 | 29.68 | — .48 | + .07 | 29.27 | 3 | Aug. 24 | 29.65 | — .55 | + .07 | 29.17 | 1 |
| Sept. 23 | 29.75 | — .38 | + .04 | 29.41 | 1 | Sept. 18 | 29.66 | — .46 | + .04 | 29.24 | 8 |
| Oct. 22 | 29.60 | — .36 | + .02 | 29.26 | 5 | Oct. 17 | 29.36 | — .36 | + .02 | 29.02 | 3 |
| Nov. 14 | 29.94 | — .27 | .00 | 29.67 | 14 | Nov. 2 | 29.51 | — .39 | + .01 | 29.13 | 2 |
| Dec. ... | ..... | ..... | ..... | ..... | ... | Dec. ... | ..... | ..... | ..... | ..... | ... |
| Mean ... | 29.814 | — .311 | + .009 | 29.512 | 48 | Mean ... | 29.594 | — .350 | .000 | 29.244 | 34 |

PRESSURE OF DRY AIR UNDER DIFFERENT WINDS.

| SOUTH. | | | | | | SOUTH WEST. | | | | | |
|------------|-------------|------------------|-------------------------------|-------------------------------|-------------|-------------|-------------|------------------|-------------------------------|-------------------------------|-------------|
| Mean Date. | Mean Barom. | Force of Vapour. | Reduction to Annual Pressure. | Mean Ann. Pressure of Dry Air | No. of Obs. | Mean Date. | Mean Barom. | Force of Vapour. | Reduction to Annual Pressure. | Mean Ann. Pressure of Dry Air | No. of Obs. |
| 1857. | Inches. | Inches. | Inches. | Inches. | | 1857. | Inches. | Inches. | Inches. | Inches. | |
| Jan. 17 | 30.13 | — .28 | — .09 | 29.76 | 1 | Jan. 19 | 29.68 | — .22 | — .09 | 29.37 | 12 |
| Feb. 15 | 29.73 | — .24 | — .07 | 29.42 | 8 | Feb. 16 | 29.96 | — .23 | — .07 | 29.66 | 10 |
| March 17 | 29.65 | — .24 | — .06 | 29.35 | 10 | March 16 | 29.47 | — .25 | — .06 | 29.16 | 9 |
| April 9 | 29.50 | — .28 | — .04 | 29.18 | 9 | April 11 | 29.50 | — .26 | — .04 | 29.20 | 11 |
| May 22 | 29.56 | — .36 | + .01 | 29.21 | 4 | May 19 | 29.67 | — .37 | .00 | 29.30 | 7 |
| June 16 | 29.70 | — .41 | + .09 | 29.38 | 5 | June 13 | 29.62 | — .40 | + .08 | 29.30 | 10 |
| July 11 | 29.75 | — .44 | + .12 | 29.43 | 2 | July 18 | 29.81 | — .43 | + .12 | 29.50 | 25 |
| Aug. 15 | 29.76 | — .49 | + .09 | 29.36 | 3 | Aug. 13 | 29.95 | — .48 | + .09 | 29.56 | 6 |
| Sept. 15 | 29.68 | — .45 | + .05 | 29.28 | 11 | Sept. 13 | 29.63 | — .40 | + .05 | 29.28 | 13 |
| Oct. 20 | 29.82 | — .39 | + .02 | 29.45 | 5 | Oct. 12 | 29.76 | — .36 | + .03 | 29.43 | 12 |
| Nov. ... | ..... | ..... | ..... | ..... | ... | Nov. 23 | 29.76 | — .28 | — .03 | 29.45 | 3 |
| Dec. 4 | 29.86 | — .31 | — .05 | 29.50 | 3 | Dec. 12 | 30.11 | — .27 | — .07 | 29.77 | 16 |
| Mean ... | 29.683 | — .341 | — .002 | 29.340 | 61 | Mean ... | 29.759 | — .335 | + .010 | 29.434 | 134 |
| WEST. | | | | | | NORTH WEST. | | | | | |
| Mean Date. | Mean Barom. | Force of Vapour. | Reduction to Annual Pressure. | Mean Ann. Pressure of Dry Air | No. of Obs. | Mean Date. | Mean Barom. | Force of Vapour. | Reduction to Annual Pressure. | Mean Ann. Pressure of Dry Air | No. of Obs. |
| 1857. | Inches. | Inches. | Inches. | Inches. | | 1857. | Inches. | Inches. | Inches. | Inches. | |
| Jan. 13 | 29.45 | — .22 | — .09 | 29.14 | 9 | Jan. 9 | 29.65 | — .21 | — .09 | 29.35 | 8 |
| Feb. 13 | 29.92 | — .21 | — .08 | 29.63 | 5 | Feb. 27 | 30.26 | — .23 | — .07 | 29.96 | 2 |
| March 13 | 29.53 | — .24 | — .06 | 29.23 | 8 | March 16 | 29.65 | — .21 | — .06 | 29.38 | 4 |
| April 14 | 29.45 | — .23 | — .04 | 29.18 | 8 | April 29 | 29.89 | — .21 | — .02 | 29.66* | 1 |
| May 12 | 29.87 | — .31 | — .01 | 29.55 | 3 | May 8 | 29.92 | — .32 | — .01 | 29.56 | 2 |
| June 15 | 29.57 | — .40 | + .09 | 29.26 | 3 | June 21 | 29.77 | — .41 | + .09 | 29.45 | 4 |
| July 15 | 29.80 | — .40 | + .13 | 29.53 | 21 | July 20 | 29.83 | — .36 | + .12 | 29.59 | 1 |
| Aug. 7 | 29.74 | — .46 | + .09 | 29.37 | 10 | Aug. 17 | 29.73 | — .42 | + .09 | 29.40 | 7 |
| Sept. 11 | 29.80 | — .40 | + .05 | 29.45 | 7 | Sept. 25 | 29.70 | — .39 | + .04 | 29.35 | 1 |
| Oct. 12 | 29.56 | — .33 | + .03 | 29.26 | 7 | Oct. 15 | 29.20 | — .30 | + .03 | 28.93 | 2 |
| Nov. 22 | 29.64 | — .30 | — .03 | 29.31 | 3 | Nov. 20 | 30.13 | — .30 | — .03 | 29.80 | 1 |
| Dec. 17 | 30.05 | — .28 | — .07 | 29.70 | 20 | Dec. 27 | 30.26 | — .23 | — .08 | 29.95 | 3 |
| Mean ... | 29.745 | — .322 | + .009 | 29.432 | 104 | Mean ... | 29.780 | — .299 | — .006 | 29.475 | 36 |

TEMPERATURE UNDER DIFFERENT WINDS.

| NORTH. | | | | | NORTH EAST. | | | | |
|-------------|-------------------|----------------------------------|--------------------------|-------------|-------------|-------------------|----------------------------------|--------------------------|-------------|
| Mean Date. | Mean Temperature. | Reduction to Annual Temperature. | Mean Annual Temperature. | No. of Obs. | Mean Date. | Mean Temperature. | Reduction to Annual Temperature. | Mean Annual Temperature. | No. of Obs. |
| 1857. | Deg. | Deg. | Deg. | | 1857. | Deg. | Deg. | Deg. | |
| January 17. | 35.6 | + 11.2 | 46.8 | 10 | January 16 | 38.7 | + 11.2 | 49.9 | 3 |
| February... | ..... | ..... | ..... | ... | February 8 | 32.7 | + 9.8 | 42.5 | 4 |
| March 19 | 37.7 | + 6.9 | 44.6 | 5 | March 11 | 42.0 | + 8.0 | 50.0 | 4 |
| April 27 | 41.5 | — 0.4 | 41.1 | 6 | April 26 | 39.8 | + 0.9 | 40.7 | 6 |
| May 17 | 51.9 | — 6.0 | 45.9 | 7 | May 14 | 49.3 | — 3.3 | 46.0 | 16 |
| June 15 | 58.8 | — 10.4 | 48.4 | 6 | June 17 | 60.8 | — 10.4 | 50.4 | 11 |
| July 1 | 55.1 | — 11.2 | 43.9 | 1 | July ... | ..... | ..... | ..... | ... |
| August 20 | 62.5 | — 12.3 | 50.2 | 8 | August 23 | 65.0 | — 10.7 | 54.3 | 7 |
| Septem. 18 | 55.4 | — 6.2 | 49.2 | 2 | Septem. 20 | 56.0 | — 6.2 | 49.8 | 4 |
| October 18 | 48.6 | + 0.2 | 48.8 | 5 | October 20 | 52.9 | + 0.2 | 53.1 | 10 |
| Novem. 13 | 45.2 | + 5.8 | 51.0 | 5 | Novem. 13 | 44.9 | + 3.8 | 48.7 | 17 |
| Decem. ... | ..... | ..... | ..... | ... | Decem. ... | ..... | ..... | ..... | ... |
| Mean | 48.1 | — 0.9 | 47.2 | 55 | Mean | 49.8 | — 1.1 | 48.7 | 82 |

| EAST. | | | | | SOUTH EAST. | | | | |
|-------------|-------------------|----------------------------------|--------------------------|-------------|-------------|-------------------|----------------------------------|--------------------------|-------------|
| Mean Date. | Mean Temperature. | Reduction to Annual Temperature. | Mean Annual Temperature. | No. of Obs. | Mean Date. | Mean Temperature. | Reduction to Annual Temperature. | Mean Annual Temperature. | No. of Obs. |
| 1857. | Deg. | Deg. | Deg. | | 1857. | Deg. | Deg. | Deg. | |
| January ... | ..... | ..... | ..... | ... | January 31 | 33.5 | + 9.9 | 43.4 | 1 |
| February 12 | 38.1 | + 9.7 | 47.8 | 4 | February 16 | 40.2 | + 8.4 | 48.6 | 2 |
| March 19 | 44.9 | + 6.9 | 51.8 | 5 | March 19 | 45.0 | + 6.9 | 51.9 | 4 |
| April 17 | 43.2 | + 2.3 | 45.5 | 3 | April 11 | 49.3 | + 3.5 | 52.8 | 7 |
| May 20 | 56.6 | — 4.2 | 52.4 | 4 | May 25 | 56.2 | — 5.0 | 51.2 | 4 |
| June 17 | 61.9 | — 10.4 | 51.5 | 9 | June 17 | 62.7 | — 10.4 | 52.3 | 2 |
| July ... | ..... | ..... | ..... | ... | July ... | ..... | ..... | ..... | ... |
| August 25 | 67.7 | — 9.9 | 57.8 | 3 | August 24 | 70.4 | — 9.9 | 60.5 | 1 |
| Septem. 23 | 57.0 | — 5.3 | 51.7 | 1 | Septem. 18 | 58.2 | — 6.2 | 52.0 | 8 |
| October 22 | 53.1 | + 0.2 | 53.3 | 5 | October 17 | 54.0 | — 1.2 | 52.8 | 3 |
| Novem. 14 | 43.7 | + 5.8 | 49.5 | 14 | Novem. 2 | 55.2 | + 3.6 | 58.8 | 2 |
| Decem. ... | ..... | ..... | ..... | ... | Decem. ... | ..... | ..... | ..... | ... |
| Mean | 50.6 | + 0.3 | 50.9 | 48 | Mean | 52.9 | — 0.6 | 52.3 | 34 |

TEMPERATURE UNDER DIFFERENT WINDS.

| SOUTH. | | | | | SOUTH WEST. | | | | |
|-------------|-------------------|----------------------------------|--------------------------|-------------|-------------|-------------------|----------------------------------|--------------------------|-------------|
| Mean Date. | Mean Temperature. | Reduction to Annual Temperature. | Mean Annual Temperature. | No. of Obs. | Mean Date. | Mean Temperature. | Reduction to Annual Temperature. | Mean Annual Temperature. | No. of Obs. |
| 1857. | Deg. | Deg. | Deg. | | 1857. | Deg. | Deg. | Deg. | |
| January 17 | 43.2 | + 11.2 | 54.4 | 1 | January 19 | 37.0 | + 11.2 | 48.2 | 12 |
| February 15 | 42.6 | + 9.6 | 52.2 | 8 | February 16 | 41.2 | + 9.6 | 50.8 | 10 |
| March 17 | 41.3 | + 6.9 | 48.2 | 10 | March 16 | 42.8 | + 7.4 | 50.2 | 9 |
| April 9 | 48.3 | + 4.1 | 52.3 | 9 | April 11 | 46.3 | + 3.5 | 49.8 | 11 |
| May 22 | 56.0 | — 5.0 | 51.0 | 4 | May 19 | 56.3 | — 4.2 | 52.1 | 7 |
| June 16 | 64.3 | — 10.4 | 53.9 | 5 | June 13 | 61.8 | — 9.6 | 52.2 | 10 |
| July 11 | 64.4 | — 11.7 | 52.7 | 2 | July 18 | 64.5 | — 12.0 | 52.5 | 25 |
| August 15 | 67.4 | — 11.6 | 55.8 | 3 | August 13 | 64.8 | — 12.2 | 52.6 | 6 |
| Septem. 15 | 59.7 | — 7.0 | 52.7 | 11 | Septem. 13 | 58.6 | — 7.0 | 51.6 | 13 |
| October 20 | 55.2 | + 0.2 | 55.4 | 5 | October 12 | 53.7 | — 2.2 | 51.5 | 12 |
| Novem. .... | ..... | ..... | ..... | ... | Novem. 23 | 46.3 | + 7.3 | 53.6 | 3 |
| Decem. 4 | 48.5 | + 7.7 | 56.2 | 3 | Decem. 12 | 45.0 | + 8.3 | 53.3 | 16 |
| Mean | 52.2 | + 0.2 | 52.4 | 61 | Mean | 52.4 | — 0.9 | 51.5 | 134 |
| WEST. | | | | | NORTH WEST. | | | | |
| Mean Date. | Mean Temperature. | Reduction to Annual Temperature. | Mean Annual Temperature. | No. of Obs. | Mean Date. | Mean Temperature. | Reduction to Annual Temperature. | Mean Annual Temperature. | No. of Obs. |
| 1857. | Deg. | Deg. | Deg. | | 1857. | Deg. | Deg. | Deg. | |
| January 13 | 37.2 | + 12.5 | 49.7 | 9 | January 9 | 35.6 | + 12.4 | 48.0 | 8 |
| February 13 | 39.9 | + 9.5 | 49.4 | 5 | February 27 | 39.9 | + 8.8 | 48.7 | 2 |
| March 13 | 41.4 | + 7.4 | 48.8 | 8 | March 16 | 37.0 | + 7.4 | 44.4 | 4 |
| April 14 | 44.8 | + 3.5 | 48.3 | 8 | April 29 | 42.6 | — 0.4 | 42.2 | 1 |
| May 12 | 53.3 | — 3.3 | 50.0 | 3 | May 8 | 52.7 | — 2.6 | 50.1 | 2 |
| June 15 | 61.0 | — 10.4 | 50.6 | 3 | June 21 | 60.3 | — 10.7 | 49.6 | 4 |
| July 15 | 64.1 | — 12.0 | 52.1 | 21 | July 20 | 65.6 | — 12.3 | 53.3 | 1 |
| August 29 | 61.9 | — 9.2 | 52.7 | 10 | August 17 | 61.4 | — 11.6 | 49.8 | 7 |
| Septem. 11 | 58.7 | — 7.8 | 50.9 | 7 | Septem. 25 | 55.7 | — 5.3 | 50.4 | 1 |
| October 12 | 52.1 | — 2.2 | 49.9 | 7 | October 15 | 48.9 | — 1.2 | 47.7 | 2 |
| Novem. 22 | 47.1 | + 7.3 | 54.4 | 3 | Novem. 20 | 46.1 | + 7.3 | 53.4 | 1 |
| Decem. 17 | 45.9 | + 9.3 | 55.2 | 20 | Decem. 27 | 41.5 | + 10.8 | 52.3 | 3 |
| Mean | 51.6 | 0.0 | 51.6 | 104 | Mean | 47.8 | + 1.0 | 48.8 | 36 |

MEAN DAILY VELOCITY OF THE WIND, AND AMOUNT OF CLOUD UNDER
DIFFERENT WINDS IN 1857.

| Date. | NORTH. | | | NORTH EAST. | | | EAST. | | | SOUTH EAST. | | |
|---------------|--------|--------|------|-------------|--------|------|--------|--------|------|-------------|--------|------|
| | Wind. | Cloud. | Obs. | Wind. | Cloud. | Obs. | Wind. | Cloud. | Obs. | Wind. | Cloud. | Obs. |
| 1857. | Miles. | | | Miles. | | | Miles. | | | Miles. | | |
| January | 145 | 8.2 | 10 | 163 | 7.3 | 3 | ... | ... | ... | 86 | 4.0 | 1 |
| February..... | ... | ... | ... | 77 | 8.2 | 4 | 83 | 9.0 | 4 | 66 | 7.0 | 2 |
| March | 110 | 6.2 | 5 | 162 | 4.8 | 4 | 125 | 8.8 | 5 | 91 | 7.8 | 4 |
| April | 104 | 8.8 | 6 | 117 | 8.7 | 6 | 130 | 9.0 | 3 | 98 | 8.0 | 7 |
| May..... | 117 | 7.6 | 7 | 116 | 6.7 | 16 | 69 | 6.3 | 4 | 88 | 7.5 | 4 |
| June | 121 | 7.0 | 6 | 108 | 4.2 | 11 | 64 | 2.7 | 9 | 46 | 5.0 | 2 |
| July | 136 | 10.0 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| August | 95 | 6.3 | 8 | 99 | 7.0 | 7 | 54 | 2.7 | 3 | 36 | 5.0 | 1 |
| September ... | 70 | 8.0 | 2 | 77 | 7.0 | 4 | 72 | 3.0 | 1 | 50 | 8.5 | 8 |
| October | 91 | 8.6 | 5 | 66 | 8.2 | 10 | 80 | 9.0 | 5 | 97 | 8.0 | 3 |
| November ... | 72 | 6.8 | 5 | 61 | 8.0 | 17 | 68 | 8.4 | 14 | 58 | 7.5 | 2 |
| December | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Year | 109 | 7.5 | 55 | 96 | 7.1 | 82 | 79 | 6.9 | 48 | 75 | 7.6 | 34 |
| Winter | 145 | 8.2 | 10 | 114 | 7.8 | 7 | 83 | 9.0 | 4 | 73 | 6.0 | 3 |
| Spring | 111 | 7.6 | 18 | 123 | 6.7 | 26 | 108 | 8.0 | 12 | 93 | 7.8 | 15 |
| Summer | 108 | 6.8 | 15 | 105 | 5.3 | 18 | 62 | 2.7 | 12 | 43 | 5.0 | 3 |
| Autumn | 80 | 7.7 | 12 | 65 | 8.0 | 31 | 71 | 8.3 | 20 | 62 | 8.2 | 13 |

| Date. | SOUTH. | | | SOUTH WEST. | | | WEST. | | | NORTH WEST. | | |
|---------------|--------|--------|------|-------------|--------|------|--------|--------|------|-------------|--------|------|
| | Wind. | Cloud. | Obs. | Wind. | Cloud. | Obs. | Wind. | Cloud. | Obs. | Wind. | Cloud. | Obs. |
| 1857. | Miles. | | | Miles. | | | Miles. | | | Miles. | | |
| January | 132 | 9.0 | 1 | 132 | 6.4 | 12 | 157 | 5.4 | 9 | 161 | 8.8 | 8 |
| February..... | 100 | 7.0 | 8 | 108 | 7.1 | 10 | 147 | 6.8 | 5 | 58 | 4.5 | 2 |
| March..... | 103 | 6.1 | 10 | 206 | 7.8 | 9 | 223 | 6.6 | 8 | 149 | 5.2 | 4 |
| April | 97 | 9.2 | 9 | 120 | 7.2 | 11 | 142 | 6.6 | 8 | 92 | 9.0 | 1 |
| May | 77 | 6.0 | 4 | 111 | 5.7 | 7 | 116 | 6.7 | 3 | 49 | 10.0 | 2 |
| June | 74 | 5.6 | 5 | 125 | 6.8 | 10 | 96 | 8.0 | 3 | 56 | 7.8 | 4 |
| July | 102 | 7.5 | 2 | 121 | 6.8 | 25 | 130 | 6.9 | 21 | 164 | 5.0 | 1 |
| August..... | 45 | 5.3 | 3 | 62 | 4.5 | 6 | 71 | 6.5 | 10 | 61 | 7.4 | 7 |
| September ... | 57 | 7.6 | 11 | 65 | 6.8 | 13 | 78 | 6.4 | 7 | 49 | 9.0 | 1 |
| October | 56 | 8.0 | 5 | 84 | 6.8 | 12 | 127 | 8.0 | 7 | 111 | 8.5 | 2 |
| November.... | ... | ... | ... | 121 | 8.7 | 3 | 87 | 9.0 | 3 | 36 | 10.0 | 1 |
| December | 121 | 3.1 | 3 | 92 | 6.8 | 16 | 143 | 6.9 | 20 | 49 | 9.0 | 3 |
| Year | 84 | 7.0 | 61 | 112 | 6.8 | 134 | 132 | 6.8 | 104 | 96 | 7.8 | 36 |
| Winter | 108 | 6.2 | 12 | 109 | 6.8 | 38 | 148 | 6.5 | 34 | 119 | 8.2 | 13 |
| Spring | 96 | 7.3 | 23 | 146 | 7.0 | 27 | 172 | 6.6 | 19 | 112 | 7.1 | 7 |
| Summer | 71 | 5.9 | 10 | 113 | 6.5 | 41 | 110 | 6.9 | 34 | 68 | 7.3 | 12 |
| Autumn..... | 57 | 7.7 | 16 | 79 | 7.0 | 28 | 100 | 7.5 | 17 | 77 | 9.0 | 4 |

FALL OF RAIN UNDER DIFFERENT WINDS.

| Mean Date. | N. | | NE. | | E. | | SE. | | S. | | SW. | | W. | | NW. | | Sum. | |
|-----------------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
| | Fall. | Days | Fall. | Days | Fall. | Days | Fall. | Days | Fall. | Days | Fall. | Days | Fall. | Days | Fall. | Days | Fall. | Days |
| 1857. | In. | | In. | | In. | | In. | | In. | | In. | | In. | | In. | | In. | |
| Jan. | 0.96 | 3.5 | 0.24 | 1.5 | 0.00 | 0.0 | 0.00 | 0.0 | 0.00 | 0.0 | 0.78 | 6.0 | 0.53 | 4.0 | 0.66 | 3.0 | 3.17 | 18 |
| Feb. | .00 | 0.0 | .00 | 0.0 | 0.01 | 1.0 | .07 | 1.0 | .15 | 3.0 | .08 | 2.0 | .01 | 1.0 | .00 | 0.0 | 0.32 | 8 |
| March | .02 | 0.5 | .04 | 1.0 | .27 | 3.0 | .25 | 1.0 | .47 | 4.5 | .34 | 3.5 | .16 | 1.5 | .00 | 0.0 | 1.55 | 15 |
| April | .19 | 2.0 | .01 | 1.0 | .05 | 0.5 | .54 | 2.0 | .47 | 2.0 | .30 | 2.0 | .46 | 3.5 | .00 | 0.0 | 2.02 | 13 |
| May | .32 | 1.0 | .31 | 2.0 | .07 | 0.5 | .33 | 2.0 | .00 | 0.0 | .04 | 1.0 | .00 | 0.0 | .12 | 0.5 | 1.19 | 7 |
| June | .35 | 1.0 | .45 | 1.5 | .09 | 0.5 | .40 | 0.5 | .51 | 2.0 | .34 | 3.5 | .43 | 0.5 | .47 | 1.5 | 3.04 | 11 |
| July | .00 | 0.0 | .00 | 0.0 | .00 | 0.0 | .00 | 0.0 | .17 | 0.5 | 2.57 | 4.0 | .43 | 2.5 | .00 | 0.0 | 3.17 | 7 |
| Aug. | .08 | 0.5 | .00 | 0.0 | .00 | 0.0 | .00 | 0.0 | .02 | 1.0 | 0.02 | 0.5 | 2.36 | 4.5 | 1.20 | 3.5 | 3.68 | 10 |
| Sept. | .00 | 0.0 | .00 | 0.0 | .00 | 0.0 | .31 | 2.5 | 1.14 | 5.0 | 1.31 | 5.5 | 0.77 | 3.0 | 0.35 | 1.0 | 3.88 | 17 |
| Oct. | 2.08 | 3.0 | .20 | 2.5 | .19 | 2.0 | .53 | 1.5 | 0.14 | 1.5 | 0.35 | 2.5 | 0.80 | 3.0 | .28 | 1.0 | 4.57 | 17 |
| Nov. | 0.13 | 1.0 | .33 | 6.0 | 1.00 | 3.5 | .05 | 2.0 | 0.00 | 0.0 | .12 | 2.0 | .03 | 2.0 | .02 | 1.5 | 1.67 | 18 |
| Dec. | .04 | 0.5 | .04 | 0.5 | .48 | 4.0 | .10 | 1.0 | .00 | 0.0 | .00 | 0.0 | .00 | 0.0 | .00 | 0.0 | 0.66 | 6 |
| Sum | 4.17 | 13.0 | 1.62 | 16.0 | 2.16 | 15.0 | 2.58 | 13.5 | 3.07 | 19.5 | 6.25 | 32.5 | 5.98 | 25.5 | 5.10 | 12.0 | 28.92 | 147 |
| Average fall per diem | .320 | ... | .101 | ... | .148 | ... | .191 | ... | .157 | ... | .192 | ... | .230 | ... | .258 | ... | .197 | ... |

NORMAL MEAN TEMPERATURE OF EVERY 5 DAYS COMPARED WITH
THE SAME IN 1857.

| Month. | | Mean Temperature. | | Excess in 1857. | Month. | | Mean Temperature. | | Excess in 1857. |
|----------|-------|-------------------|-------|-----------------------|----------|-----------|-------------------|-------|-----------------------|
| | | Normal | 1857. | | | | Normal | 1857. | |
| | | o | o | o | | | o | o | o |
| January | 1—5 | 36.7 | 39.6 | + 2.9 | July | 5—9 | 60.0 | 57.3 | — 2.7 |
| | 6—10 | 36.2 | 38.4 | + 2.2 | | 10—14 | 60.3 | 65.5 | + 5.2 |
| | 11—15 | 36.1 | 34.8 | — 1.3 | | 15—19 | 60.6 | 65.0 | + 4.4 |
| | 16—20 | 37.4 | 39.7 | + 2.3 | | 20—24 | 60.9 | 65.9 | + 5.0 |
| | 21—25 | 38.2 | 36.6 | — 1.6 | | 25—29 | 61.0 | 62.7 | + 1.7 |
| | 26—30 | 38.6 | 30.0 | — 8.6 | | August | 30—3 | 61.2 | 67.0 | + 5.8 |
| February | 31—4 | 38.7 | 31.2 | — 7.5 | 4—8 | | 61.0 | 59.8 | — 1.2 |
| | 5—9 | 38.8 | 41.6 | + 2.8 | 9—13 | | 60.8 | 63.9 | + 3.1 |
| | 10—14 | 38.9 | 38.9 | 0.0 | 14—18 | | 60.2 | 61.8 | + 1.6 |
| | 15—19 | 39.0 | 42.6 | + 3.6 | 19—23 | | 59.3 | 66.7 | + 7.4 |
| | 20—24 | 39.5 | 41.4 | + 1.9 | 24—28 | | 58.5 | 63.4 | + 4.9 |
| | March | 25—1 | 39.8 | 42.4 | + 2.6 | September | 29—2 | 57.8 | 60.8 | + 3.0 |
| 2—6 | | 40.0 | 43.1 | + 3.1 | 3—7 | | 57.1 | 57.8 | + 0.7 |
| 7—11 | | 40.6 | 36.2 | — 4.4 | 8—12 | | 56.4 | 59.0 | + 2.6 |
| 12—16 | | 41.2 | 41.5 | + 0.3 | 13—17 | | 55.6 | 62.8 | + 7.2 |
| 17—21 | | 41.7 | 44.2 | + 2.5 | 18—22 | | 54.8 | 56.1 | + 1.3 |
| 22—26 | | 42.3 | 38.6 | — 3.7 | 23—27 | | 53.9 | 58.7 | + 4.8 |
| April | 27—31 | 43.0 | 45.4 | + 2.4 | October | 28—2 | 53.1 | 56.2 | + 3.1 |
| | 1—5 | 43.8 | 50.0 | + 6.2 | | 3—7 | 52.1 | 50.7 | — 1.4 |
| | 6—10 | 44.5 | 49.6 | + 5.1 | | 8—12 | 50.8 | 54.5 | + 3.7 |
| | 11—15 | 45.1 | 39.6 | — 5.5 | | 13—17 | 49.8 | 54.4 | + 4.6 |
| | 16—20 | 46.3 | 50.1 | + 3.8 | | 18—22 | 48.4 | 50.7 | + 2.3 |
| | 21—25 | 47.7 | 43.3 | — 4.4 | | 23—27 | 47.3 | 52.5 | + 5.2 |
| May | 26—30 | 49.0 | 40.6 | — 8.4 | November | 28—1 | 45.8 | 47.8 | + 2.0 |
| | 1—5 | 50.2 | 42.6 | — 7.6 | | 2—6 | 45.0 | 53.7 | + 8.7 |
| | 6—10 | 51.2 | 46.7 | — 4.5 | | 7—11 | 43.9 | 45.4 | + 1.5 |
| | 11—15 | 51.9 | 58.3 | + 6.4 | | 12—16 | 42.8 | 43.2 | + 0.4 |
| | 16—20 | 52.8 | 57.3 | + 4.5 | | 17—21 | 42.0 | 45.8 | + 3.8 |
| | 21—25 | 53.6 | 54.6 | + 1.0 | | 22—26 | 41.3 | 42.5 | + 1.2 |
| June | 26—30 | 55.0 | 55.8 | + 0.8 | December | 27—1 | 41.0 | 41.3 | + 0.3 |
| | 31—4 | 56.1 | 57.3 | + 1.2 | | 2—6 | 40.9 | 48.6 | + 7.7 |
| | 5—9 | 57.4 | 60.8 | + 3.4 | | 7—11 | 40.7 | 44.2 | + 3.5 |
| | 10—14 | 58.2 | 54.8 | — 3.4 | | 12—16 | 40.3 | 46.2 | + 5.9 |
| | 15—19 | 59.0 | 57.4 | — 1.6 | | 17—21 | 39.1 | 45.5 | + 6.4 |
| | 20—24 | 59.3 | 66.9 | + 7.6 | | 22—26 | 38.5 | 47.9 | + 9.4 |
| July | 25—29 | 59.5 | 67.9 | + 8.4 | 27—31 | 37.8 | 39.1 | + 1.3 | |
| | 30—4 | 59.8 | 59.0 | — 0.8 | | | | | |

TABLE SHOWING THE OSCILLATIONS OF THE BAROMETER, IN THE YEAR 1857,
AMOUNTING TO, OR EXCEEDING, 0.1 INCH.

| Month. | Day and Hour. | Barom. | Wind. | Month. | Day and Hour. | Barom. | Wind. |
|---------------|---------------|---------|-------|-------------|---------------|---------|-------|
| 1856. | d. h. | Inches. | | 1857. | d. h. | Inches. | |
| December ... | 30 14 | 30.45 | W S W | March..... | 18 4 | 29.54 | S S E |
| 1857. | | | | | 21 10 | 29.88 | N E |
| January | 3 6 | 28.78 | W | | 24 18 | 29.19 | E N E |
| | 7 10 | 30.21 | N N W | | 27 10 | 29.85 | N |
| | 10 16 | 28.70 | N E | | 30 6 | 28.92 | W S W |
| | 11 12 | 29.17 | N N E | | 31 20 | 29.29 | W S W |
| | 12 4 | 28.91 | N N W | April | 1 20 | 28.84 | E N E |
| | 14 8 | 30.01 | W S W | | 3 22 | 29.58 | S S E |
| | 15 2 | 29.79 | S W | | 5 16 | 29.35 | S E |
| | 17 12 | 30.15 | S W | | 7 10 | 29.78 | S W |
| | 18 18 | 30.02 | S W | | 10 6 | 29.18 | S S E |
| | 19 6 | 30.14 | W | | 11 8 | 29.37 | S W |
| | 20 10 | 29.12 | S W | | 12 16 | 28.75 | W S W |
| | 21 22 | 29.69 | N W | | 17 20 | 29.76 | S S E |
| | 23 18 | 28.89 | W S W | | 18 16 | 29.61 | S S E |
| | 26 22 | 29.75 | N | | 20 22 | 30.12 | N |
| | 28 10 | 29.62 | N | | 22 4 | 29.76 | N |
| | 29 12 | 29.74 | W S W | | 23 16 | 29.88 | N E |
| | 30 12 | 29.38 | S | | 25 6 | 29.44 | E N E |
| | 31 22 | 29.78 | S E | | 27 20 | 29.92 | N |
| February..... | 2 6 | 29.28 | S E | | 28 4 | 29.83 | N |
| | 4 10 | 30.10 | N E | May | 5 20 | 30.08 | N N E |
| | 9 14 | 29.24 | S S E | | 10 18 | 29.46 | N N E |
| | 12 10 | 30.21 | W S W | | 12 22 | 29.89 | S W |
| | 17 18 | 29.76 | S S E | | 14 4 | 29.75 | E |
| | 21 12 | 30.10 | S W | | 15 22 | 29.96 | N W |
| | 22 6 | 29.99 | S S E | | 21 2 | 29.45 | W S W |
| | 23 0 | 30.12 | N N E | | ... 20 | 29.68 | S W |
| | 24 18 | 29.95 | S S E | | 23 16 | 29.24 | S S E |
| | 28 22 | 30.40 | N N E | | 24 10 | 29.39 | S |
| March..... | 4 4 | 29.86 | W S W | | 25 8 | 29.15 | E N E |
| | ... 22 | 30.22 | W S W | | 31 12 | 29.89 | E |
| | 8 2 | 29.28 | W S W | June | 2 6 | 29.64 | S S E |
| | 9 14 | 29.89 | N W | | 4 10 | 29.92 | S |
| | 10 22 | 29.71 | N | | 7 10 | 29.45 | S W |
| | 11 22 | 29.86 | S S W | | 8 22 | 29.61 | S W |
| | 13 22 | 28.85 | W S W | | 10 2 | 29.34 | W S W |
| | 14 6 | 29.01 | W S W | | 12 20 | 30.12 | S S E |
| | ... 12 | 28.81 | W S W | | 15 4 | 29.71 | E N E |
| | 16 12 | 29.81 | S | | 17 22 | 30.02 | N E |

TABLE SHOWING THE OSCILLATIONS OF THE BAROMETER, IN THE YEAR 1857,
AMOUNTING TO, OR EXCEEDING, 0.1 INCH.

| Month. | Day and Hour. | Barom. | Wind. | Month. | Day and Hour. | Barom. | Wind. |
|---------------|---------------|---------|-------|---------------|---------------|---------|-------|
| 1857. | d. h. | Inches. | | 1857. | d. h. | Inches. | |
| June | 20 14 | 29.71 | SE | September ... | 30 4 | 29.75 | SSE |
| | 24 22 | 30.20 | E | October | 1 22 | 30.02 | W |
| | 30 4 | 29.31 | WSW | | 5 16 | 29.45 | SSW |
| July | 2 2 | 29.85 | NW | | 6 8 | 29.56 | WSW |
| | 5 16 | 29.42 | WSW | | 8 0 | 28.64 | NE |
| | 7 22 | 29.78 | WNW | | 12 22 | 30.05 | SSW |
| | 9 6 | 29.69 | W | | 18 10 | 29.26 | ENE |
| | 12 22 | 30.16 | WSW | | 19 22 | 29.69 | ENE |
| | 16 2 | 29.65 | W | | 22 6 | 29.46 | N |
| | 18 10 | 30.02 | WSW | | 23 22 | 29.98 | E |
| | 19 18 | 29.76 | WSW | | 26 18 | 29.50 | ENE |
| | 20 22 | 29.88 | WSW | | 28 10 | 29.83 | SW |
| | 22 4 | 29.74 | WSW | | 29 20 | 29.56 | WSW |
| | ... 22 | 29.81 | WSW | | 30 22 | 29.93 | WSW |
| | 24 18 | 29.51 | WSW | November ... | 2 16 | 29.46 | SSE |
| | 26 10 | 29.78 | S | | 11 22 | 30.58 | ENE |
| | 27 16 | 29.64 | ? | | 14 14 | 30.03 | NE |
| | 28 22 | 29.98 | NNW | | ... 22 | 30.16 | NE |
| | 30 6 | 29.80 | WSW | | 17 2 | 29.92 | NE |
| August | 2 2 | 29.91 | WSW | | 20 22 | 30.16 | W |
| | 3 16 | 29.68 | S | | 23 20 | 29.04 | W |
| | 4 10 | 29.75 | W | | 25 10 | 29.45 | ENE |
| | 7 8 | 29.45 | WSW | | ... 18 | 29.34 | ENE |
| | 11 20 | 29.96 | W | | 27 22 | 30.01 | ENE |
| | 14 8 | 29.49 | WNW | | 30 18 | 29.61 | ESE |
| | 15 10 | 29.69 | NNE | December ... | 2 0 | 29.83 | WNW |
| | ... 18 | 29.62 | N | | 3 4 | 29.49 | SSW |
| | 20 10 | 29.98 | NE | | 7 22 | 30.50 | WNW |
| | 23 16 | 29.52 | ENE | | 9 16 | 30.12 | SSW |
| | 26 20 | 30.14 | WSW | | 12 2 | 30.52 | WSW |
| September ... | 3 4 | 29.29 | SSE | | 15 2 | 29.86 | W |
| | 6 22 | 29.71 | WSW | | 17 20 | 29.96 | W |
| | 8 6 | 29.22 | WSW | | 18 6 | 29.75 | SSW |
| | 10 0 | 29.53 | WSW | | 19 8 | 29.98 | WNW |
| | 11 12 | 29.39 | WSW | | 20 2 | 29.65 | W |
| | 19 14 | 30.23 | NE | | 23 22 | 30.25 | W |
| | 24 18 | 29.59 | SSE | | 24 18 | 30.06 | W |
| | 25 22 | 29.76 | NW | | 25 16 | 30.23 | WNW |
| | 27 4 | 29.60 | WSW | | 26 4 | 30.16 | NW |
| | 29 10 | 29.92 | S | | 30 10 | 30.40 | WSW |

TABLE SHOWING THE CHANGES IN THE DIRECTION OF THE WIND,
AMOUNTING TO 45°. FROM 1856 DECEMBER 31 TO 1857 DECEMBER 31.

| Month. | Period. | | Duration. | Direction of Wind. | Direction and Amount of Change. | Distance travelled. |
|----------------|---------|---------|-----------|--------------------|---------------------------------|---------------------|
| 1856. | d. h. | d. h. | h. | | ° | Miles. |
| December... .. | 31 12 | to 2 12 | 48 | W | ..... | 434 |
| 1857. | | | | | | |
| January | 2 12 | 2 20 | 8 | S | — 90 | 49 |
| | 2 20 | 3 22 | 26 | W | + 90 | 446 |
| | 3 22 | 4 6 | 8 | N N W | + 67.5 | 62 |
| | 4 6 | 4 10 | 4 | S E | + 157.5 | 40 |
| | 4 10 | 5 6 | 20 | W | + 135 | 253 |
| | 5 6 | 9 0 | 90 | N N W | + 67.5 | 500 |
| | 9 0 | 9 10 | 10 | W N W | — 45 | 77 |
| | 9 10 | 10 14 | 28 | N | + 67.5 | 214 |
| | 10 14 | 11 22 | 32 | N E | + 45 | 170 |
| | 11 22 | 12 10 | 12 | N N W | — 67.5 | 32 |
| | 12 10 | 14 16 | 54 | W S W | — 90 | 180 |
| | 14 16 | 15 2 | 10 | S S W | — 45 | 34 |
| | 15 2 | 15 16 | 14 | W S W | + 45 | 36 |
| | 15 16 | 18 18 | 74 | S S ₂ W | — 45 | 424 |
| | 18 18 | 19 12 | 18 | W | + 67.5 | 58 |
| | 19 12 | 19 22 | 10 | S S W | — 67.5 | 56 |
| | 19 22 | 21 12 | 38 | W S W | + 45 | 162 |
| | 21 12 | 21 22 | 10 | N W | + 67.5 | 25 |
| | 21 22 | 23 22 | 48 | S W | — 90 | 417 |
| | 23 22 | 29 2 | 124 | N ? | + 135 ? | 792 |
| | 29 2 | 30 4 | 26 | W S W | — 112.5 ? | 102 |
| | 30 4 | 30 10 | 6 | S | — 67.5 | 27 |
| | 30 10 | 31 2 | 16 | W S ₂ W | + 67.5 | 62 |
| | 31 2 | 1 0 | 22 | S E | + 247.5 ? | 76 |
| February | 1 0 | 1 14 | 14 | N | — 135 | 38 |
| | 1 14 | 2 8 | 18 | S E | + 135 | 84 |
| | 2 8 | 2 22 | 14 | E N E | — 67.5 | 108 |
| | 2 22 | 4 22 | 48 | N E | — 22.5 | 171 |
| | 4 22 | 7 4 | 54 | S W | — 180 | 326 |
| | 7 4 | 9 14 | 58 | S S E | — 67.5 | 383 |
| | 9 14 | 11 8 | 42 | W S W | + 90 | 347 |
| | 11 8 | 11 14 | 6 | N N W | + 90 | 32 |
| | 11 14 | 13 22 | 56 | W S W | — 90 | 308 |

TABLE OF THE CHANGES OF THE WIND (*continued.*)

| Month. | Period. | | Duration. | Direction of Wind. | Direction and Amount of Change. | Distance travelled. |
|----------------|---------|----------|-----------|--------------------|---------------------------------|---------------------|
| 1857. | d. h. | d. h. | h. | | ° | Miles. |
| February | 13 22 | to 14 16 | 18 | S | — 67.5 | 30 |
| | 14 16 | 15 10 | 18 | E N E | — 112.5 | 104 |
| | 15 10 | 18 0 | 62 | S S E | + 90 | 145 |
| | 18 0 | 18 6 | 6 | W S W | + 90 | 29 |
| | 18 6 | 19 0 | 18 | S S W | — 45 | 19 |
| | 19 0 | 19 20 | 20 | E N E | — 135 | 25 |
| | 19 20 | 20 20 | 24 | S S W | + 135 | 71 |
| | 20 20 | 21 6 | 10 | W S W | + 45 | 65 |
| | 21 6 | 21 18 | 12 | S | — 67.5 | 55 |
| | 21 18 | 22 2 | 8 | W S W | + 67.5 | 46 |
| | 22 2 | 22 22 | 20 | S S E | — 90 | 54 |
| | 22 22 | 23 14 | 16 | N N E | — 135 | 31 |
| | 23 14 | 24 22 | 32 | S E | + 112.5 | 73 |
| | 24 22 | 26 4 | 30 | N W | + 180 | 73 |
| | 26 4 | 26 12 | 8 | W S W | — 67.5 | 17 |
| | 26 12 | 27 0 | 12 | S | — 67.5 | 26 |
| | 27 0 | 28 4 | 28 | S W | + 45 | 137 |
| | 28 4 | 28 20 | 16 | N W | + 90 | 19 |
| | 28 20 | 3 8 | 60 | N E | + 90 | 214 |
| March | 3 8 | 4 6 | 22 | W S W | + 202.5 | 165 |
| | 4 6 | 4 18 | 12 | N W | + 67.5 | 50 |
| | 4 18 | 8 12 | 90 | W S W | — 67.5 | 733 |
| | 8 12 | 10 20 | 56 | N N W | + 90 | 288 |
| | 10 20 | 11 18 | 22 | S S E | + 180 | 64 |
| | 11 18 | 12 10 | 16 | W S W | + 90 | 61 |
| | 12 10 | 13 18 | 32 | S S E | — 90 | 249 |
| | 13 18 | 16 6 | 60 | W S W | + 90 | 887 |
| | 16 6 | 18 16 | 58 | S S E | — 90 | 166 |
| | 18 16 | 19 0 | 8 | N N W | + 180 | 34 |
| | 19 0 | 19 8 | 8 | N E | + 67.5 | 18 |
| | 19 8 | 20 0 | 16 | E S E | + 67.5 | 43 |
| | 20 0 | 21 14 | 38 | N E | — 67.5 | 408 |
| | 21 14 | 22 6 | 16 | N | — 45 | 122 |
| | 22 6 | 22 14 | 8 | W N W | — 67.5 | 25 |
| | 22 14 | 23 4 | 14 | W S W | — 45 | 89 |

TABLE OF THE CHANGES OF THE WIND (*continued.*)

| Month. | Period. | | Duration. | Direction of Wind. | Direction and Amount of Change. | Distance travelled. |
|-------------|---------|---------|-----------|--------------------|---------------------------------|---------------------|
| 1857. | d. h. | d. h. | h. | | ° | Miles. |
| March | 23 4 | to 24 2 | 22 | S S E | — 90 | 78 |
| | 24 2 | 24 22 | 20 | E N E | — 90 | 170 |
| | 24 22 | 25 6 | 8 | S S E | + 90 | 40 |
| | 25 6 | 25 22 | 16 | S W | + 45 | 79 |
| | 25 22 | 26 6 | 8 | N W | + 90 | 20 |
| | 26 6 | 27 22 | 40 | N | + 45 | 51 |
| | 27 22 | 28 14 | 16 | E | + 90 | 70 |
| | 28 14 | 29 18 | 28 | S S E | + 67.5 | 110 |
| | 29 18 | 1 2 | 56 | W S W | + 90 | 390 |
| April | 1 2 | 1 6 | 4 | S S E | — 90 | 24 |
| | 1 6 | 1 22 | 16 | E N E | — 90 | 100 |
| | 1 22 | 2 4 | 6 | W S W | + 180 | 65 |
| | 2 4 | 2 20 | 16 | S S E | — 90 | 49 |
| | 2 20 | 3 18 | 22 | S W | + 67.5 | 80 |
| | 3 18 | 5 22 | 52 | S E | — 90 | 135 |
| | 5 22 | 8 10 | 60 | S W | + 90 | 294 |
| | 8 10 | 9 8 | 22 | S S E | — 67.5 | 80 |
| | 9 8 | 9 22 | 14 | S W | + 67.5 | 13 |
| | 9 22 | 10 8 | 10 | S S E | — 67.5 | 19 |
| | 10 8 | 11 2 | 18 | N N W | — 180 | 62 |
| | 11 2 | 15 10 | 104 | W S W | — 90 | 692 |
| | 15 10 | 18 18 | 80 | S S E | — 90 | 350 |
| | 18 18 | 20 20 | 50 | W S W | + 90 | 256 |
| | 20 20 | 21 6 | 10 | N | + 112.5 | 62 |
| | 21 6 | 22 4 | 22 | W S W | — 112.5 | 141 |
| | 22 4 | 24 0 | 44 | N E | + 157.5 | 162 |
| | 24 0 | 24 10 | 10 | S E | + 90 | 23 |
| | 24 10 | 25 4 | 18 | E | — 45 | 69 |
| | 25 4 | 26 10 | 30 | N E | — 45 | 254 |
| May | 26 10 | 26 20 | 10 | N | — 45 | 64 |
| | 26 20 | 28 20 | 48 | N N E | + 22.5 | 162 |
| | 28 20 | 29 22 | 26 | N | — 22.5 | 103 |
| | 29 22 | 1 4 | 30 | N N E | + 22.5 | 106 |
| | 1 4 | 1 20 | 16 | W S W | — 135 | 18 |
| | 1 20 | 11 16 | 236 | N E | — 157.5 | 1275 |

TABLE OF THE CHANGES OF THE WIND (*continued.*)

| Month. | Period. | | Duration. | Direction of Wind. | Direction and Amount of Change. | Distance travelled. |
|------------|---------|---------|-----------|--------------------|---------------------------------|---------------------|
| 1857. | d. h. | d. h. | h. | | ° | Miles. |
| May | 11 16 | to 13 0 | 32 | S | + 135 | 105 |
| | 13 0 | 14 20 | 44 | E | - 90 | 129 |
| | 14 20 | 16 2 | 30 | N N W | - 112.5 | 61 |
| | 16 2 | 20 16 | 110 | W S W | - 90 | 596 |
| | 20 16 | 20 22 | 6 | S S E | - 90 | 23 |
| | 20 22 | 22 0 | 26 | S W | + 67.5 | 72 |
| | 22 0 | 22 12 | 12 | E | - 135 | 22 |
| | 22 12 | 23 0 | 12 | N N E | - 67.5 | 55 |
| | 23 0 | 23 8 | 8 | E N E | + 45 | 36 |
| | 23 8 | 23 16 | 8 | S E | + 67.5 | 15 |
| | 23 16 | 24 6 | 14 | W S W | + 112.5 | 91 |
| | 24 6 | 24 16 | 10 | S | - 67.5 | 5 |
| | 24 16 | 25 8 | 16 | E N E | - 112.5 | 87 |
| | 25 8 | 27 18 | 58 | S S E | + 90 | 169 |
| | 27 18 | 31 0 | 78 | N N E | - 135 | 376 |
| | 31 0 | 1 18 | 42 | E N E | + 45 | 129 |
| June | 1 18 | 2 18 | 24 | S S E | + 90 | 63 |
| | 2 18 | 4 6 | 36 | W S W | + 90 | 176 |
| | 4 6 | 4 22 | 16 | S S E | - 90 | 52 |
| | 4 22 | 5 18 | 20 | S S W | + 45 | 60 |
| | 5 18 | 6 16 | 22 | N | + 157.5 | 47 |
| | 6 16 | 7 0 | 8 | E | + 90 | 20 |
| | 7 0 | 11 2 | 98 | S W | + 135 | 746 |
| | 11 2 | 11 22 | 20 | N | + 135 | 50 |
| | 11 22 | 12 18 | 20 | E N E | + 67.5 | 32 |
| | 12 18 | 13 8 | 14 | S E | + 67.5 | 35 |
| | 13 8 | 15 8 | 48 | E N E | - 67.5 | 235 |
| | 15 8 | 19 20 | 108 | N E | - 45 | 767 |
| | 19 20 | 20 14 | 18 | S E | + 90 | 32 |
| | 20 14 | 21 2 | 12 | W S W | + 112.5 | 34 |
| | 21 2 | 22 22 | 44 | N W | + 67.5 | 68 |
| | 22 22 | 27 0 | 98 | E N E | + 112.5 | 170 |
| | 27 0 | 27 16 | 16 | W S W | + 180 | 25 |
| | 27 16 | 28 2 | 10 | S S E | - 90 | 24 |
| | 28 2 | 29 6 | 28 | W S W | + 90 | 134 |

TABLE OF THE CHANGES OF THE WIND (*continued.*)

| Month. | Period. | | Duration. | Direction of Wind. | Direction and Amount of Change. | Distance travelled. |
|-------------|---------|---------|-----------|--------------------|---------------------------------|---------------------|
| 1857. | d. h. | d. h. | h. | | ° | Miles. |
| June..... | 29 6 | to 30 0 | 18 | S S E | — 90 | 70 |
| | 30 0 | 30 6 | 6 | W | + 112.5 | 18 |
| | 30 6 | 30 18 | 12 | N W | + 45 | 8 |
| | 30 18 | 2 2 | 32 | N | + 45 | 167 |
| July..... | 2 2 | 2 14 | 12 | W S W | — 90 | 18 |
| | 2 14 | 2 20 | 6 | S | — 67.5 | 12 |
| | 2 20 | 3 2 | 6 | W S W | + 67.5 | 24 |
| | 3 2 | 3 18 | 16 | S S E | — 90 | 77 |
| | 3 18 | 4 6 | 12 | W S W | + 90 | 59 |
| | 4 6 | 4 12 | 6 | S S E | — 90 | 18 |
| | 4 12 | 4 20 | 8 | W S W | + 90 | 17 |
| | 4 20 | 5 4 | 8 | S | — 67.5 | 30 |
| | 5 4 | 14 18 | 230 | W | + 90 | 1060 |
| | 14 18 | 14 22 | 4 | N | + 90 | 9 |
| | 14 22 | 16 22 | 48 | W? | — 90? | 230 |
| | 16 22 | 18 20 | 46 | W S W | — 22.5? | 224 |
| | 18 20 | 19 18 | 22 | S | — 67.5 | 74 |
| | 19 18 | 20 6 | 12 | N | + 180 | 78 |
| | 20 6 | 26 22 | 160 | W S W | — 112.5 | 1108 |
| | 26 22 | 28 22 | 48 | S W? | — 22.5 | 195 |
| | 28 22 | 2 14 | 112 | W S W | + 22.5 | 565 |
| August..... | 2 14 | 3 18 | 28 | S | — 67.5 | 66 |
| | 3 18 | 5 12 | 42 | W S W | + 67.5 | 136 |
| | 5 12 | 6 22 | 34 | N W | + 67.5 | 98 |
| | 6 22 | 9 22 | 72 | W | — 45 | 216 |
| | 9 22 | 11 22 | 48 | W S W | — 22.5 | 110 |
| | 11 22 | 13 6 | 32 | S | — 67.5 | 71 |
| | 13 6 | 14 8 | 26 | N N W | + 157.5 | 86 |
| | 14 8 | 15 0 | 16 | W S W | — 90 | 40 |
| | 15 0 | 15 22 | 22 | N N W | + 90 | 71 |
| | 15 22 | 17 4 | 30 | N? | + 22.5? | 223 |
| | 17 4 | 17 20 | 16 | N N E | + 22.5? | 5 |
| | 17 20 | 18 22 | 26 | N N W | — 45 | 63 |
| | 18 22 | 24 2 | 124 | N E | + 67.5 | 493 |
| | 24 2 | 24 20 | 18 | S S E | + 112.5 | 28 |

TABLE OF THE CHANGES OF THE WIND (*continued.*)

| Month. | Period. | | Duration. | Direction of Wind. | Direction and Amount of Change. | Distance travelled. |
|----------------|---------|----------|-----------|--------------------|---------------------------------|---------------------|
| 1857. | d. h. | d. h. | h. | | ° | Miles. |
| August | 24 20 | to 26 20 | 48 | W S W | + 90 | 97 |
| | 26 20 | 27 20 | 24 | N N W | + 90 | 42 |
| | 27 20 | 30 0 | 52 | N N E | + 67.5 | 217 |
| | 30 0 | 31 2 | 26 | E | + 45 | 32 |
| | 31 2 | 31 20 | 18 | S S W | + 112.5 | 21 |
| September..... | 31 20 | 2 16 | 44 | W | + 67.5 | 210 |
| | 2 16 | 3 22 | 30 | S S E | - 112.5 | 68 |
| | 3 22 | 5 14 | 40 | S W | + 67.5 | 75 |
| | 5 14 | 5 20 | 6 | S | - 45 | 20 |
| | 5 20 | 7 4 | 32 | W S W | + 67.5 | 88 |
| | 7 4 | 8 4 | 24 | S | - 67.5 | 51 |
| | 8 4 | 8 14 | 10 | W S W | + 67.5 | 19 |
| | 8 14 | 9 16 | 26 | S | - 67.5 | 31 |
| | 9 16 | 10 16 | 24 | S W | + 45 | 49 |
| | 10 16 | 11 20 | 28 | W | + 45 | 100 |
| | 11 20 | 12 20 | 24 | S S E | - 112.5 | 42 |
| | 12 20 | 13 18 | 22 | W S W | + 90 | 40 |
| | 13 18 | 15 20 | 50 | S | - 67.5 | 100 |
| | 15 20 | 16 22 | 26 | S S W | + 22.5 | 45 |
| | 16 22 | 17 20 | 22 | W S W | + 45 | 62 |
| | 17 20 | 19 0 | 28 | N | + 112.5 | 81 |
| | 19 0 | 22 20 | 92 | N E | + 45 | 285 |
| | 22 20 | 23 18 | 22 | E | + 45 | 66 |
| | 23 18 | 24 22 | 28 | S S E | + 67.5 | 85 |
| | 24 22 | 26 2 | 28 | N W | + 157.5 | 58 |
| | 26 2 | 26 6 | 4 | S W | - 90 | 17 |
| | 26 6 | 26 16 | 10 | S | - 45 | 46 |
| | 26 16 | 29 2 | 58 | W S W | + 67.5 | 176 |
| | 29 2 | 1 0 | 46 | S S E | - 90 | 81 |
| October | 1 0 | 3 18 | 66 | W S W | + 90 | 344 |
| | 3 18 | 4 22 | 28 | N | - 112.5 | 63 |
| | 4 22 | 5 4 | 6 | W S W | - 112.5 | 47 |
| | 5 4 | 5 20 | 16 | S S W | - 45 | 44 |
| | 5 20 | 6 18 | 22 | W S W | + 45 | 79 |
| | 6 18 | 7 20 | 26 | S S E | - 90 | 164 |

TABLE OF THE CHANGES OF THE WIND (*continued.*)

| Month. | Period. | | Duration. | Direction of Wind. | Direction and Amount of Change. | Distance travelled. |
|----------------|---------|--------|-----------|--------------------|---------------------------------|---------------------|
| 1857. | d. h. | d. h. | h. | | ° | Miles. |
| October | 7 20 | to 8 2 | 6 | N E | — 112.5 | 44 |
| | 8 2 | 8 16 | 14 | W N W | — 112.5 | 70 |
| | 8 16 | 10 0 | 32 | W | — 22.5 | 251 |
| | 10 0 | 10 14 | 14 | W S W | — 22.5 | 52 |
| | 10 14 | 12 8 | 42 | S W | — 22.5 | 73 |
| | 12 8 | 13 22 | 38 | S S W | — 22.5 | 50 |
| | 13 22 | 17 0 | 74 | N E | — 157.5 | 117 |
| | 17 0 | 18 0 | 24 | S S E | + 112.5 | 46 |
| | 18 0 | 19 22 | 46 | E N E | — 90 | 146 |
| | 19 22 | 21 4 | 30 | N N E | — 45 | 56 |
| | 21 4 | 22 10 | 30 | N N W | — 45 | 168 |
| | 22 10 | 23 12 | 26 | N | + 22.5 | 142 |
| | 23 12 | 26 20 | 80 | E N E | + 67.5 | 284 |
| | 26 20 | 27 22 | 26 | S S E | + 90 | 88 |
| | 27 22 | 28 22 | 24 | S W | + 67.5 | 66 |
| | 28 22 | 31 2 | 52 | W S W | + 22.5 | 217 |
| | 31 2 | 31 22 | 20 | S | — 67.5 | 66 |
| | 31 22 | 3 6 | 56 | S S E | — 22.5 | 125 |
| November | 3 6 | 3 20 | 14 | N E | — 112.5 | 108 |
| | 3 20 | 5 14 | 42 | E N E | + 22.5 | 91 |
| | 5 14 | 7 4 | 38 | E | + 22.5 | 52 |
| | 7 4 | 10 12 | 80 | N N E | — 67.5 | 184 |
| | 10 12 | 20 2 | 230 | N E | + 22.5 | 644 |
| | 20 2 | 20 8 | 6 | N N W | — 67.5 | 12 |
| | 20 8 | 20 22 | 14 | W | — 67.5 | 16 |
| | 20 22 | 22 18 | 44 | S W | — 45 | 156 |
| | 22 18 | 23 22 | 28 | W | + 45 | 144 |
| | 23 22 | 24 14 | 16 | N N W | + 67.5 | 27 |
| | 24 14 | 25 2 | 12 | E | + 112.5 | 53 |
| | 25 2 | 26 0 | 22 | E N E | — 22.5 | 64 |
| | 26 0 | 26 4 | 4 | E S E | + 67.5 | 23 |
| | 26 4 | 26 22 | 18 | W S W | + 135 | 131 |
| December | 26 22 | 1 8 | 106 | E | + 202.5 | 430 |
| | 1 8 | 1 16 | 8 | W S W | + 157.5 | 23 |
| | 1 16 | 3 4 | 36 | S | — 67.5 | 267 |

TABLE OF THE CHANGES OF THE WIND (*continued.*)

| Month. | Period. | | Duration. | Direction of Wind. | Direction and Amount of Change. | Distance travelled. |
|----------------|---------|---------|-----------|--------------------|---------------------------------|---------------------|
| 1857. | d. h. | d. h. | h. | | ° | Miles. |
| December | 3 4 | to 4 10 | 30 | W | + 90 | 199 |
| | 4 10 | 4 22 | 12 | S W | — 45 | 24 |
| | 4 22 | 8 0 | 74 | W | + 45 | 314 |
| | 8 0 | 14 0 | 144 | S W | — 45 | 369 |
| | 14 0 | 14 4 | 4 | W | + 45 | 24 |
| | 14 4 | 14 12 | 8 | S S W | — 67.5 | 31 |
| | 14 12 | 17 20 | 80 | W | + 67.5 | 495 |
| | 17 20 | 18 6 | 10 | S S W | — 67.5 | 70 |
| | 18 6 | 19 16 | 34 | W | + 67.5 | 126 |
| | 19 16 | 19 22 | 6 | S S W | — 67.5 | 32 |
| | 19 22 | 30 6 | 248 | W N W | + 90 | 1553 |
| | 30 6 | 31 22 | 40 | W S W | — 45 | 87 |

MEAN HOURLY VELOCITY OF THE WIND AT THE KEW OBSERVATORY,
FROM OBSERVATIONS MADE IN THE YEAR 1856,

By JOHN WELSH, Esq.

| Hours reckoned from Noon. | Jan. | Feb. | Mar. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Annual Mean Hourly Velocity. |
|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------------------------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 0—1 | 14.1 | 14.7 | 17.4 | 17.5 | 16.1 | 10.0 | 12.4 | 14.5 | 12.9 | 9.7 | 10.2 | 12.1 | 13.46 |
| 1—2 | 13.4 | 14.8 | 17.5 | 17.6 | 15.8 | 11.2 | 12.6 | 14.5 | 12.6 | 9.9 | 10.3 | 11.9 | 13.51 |
| 2—3 | 13.1 | 15.2 | 17.4 | 18.3 | 15.7 | 11.9 | 13.6 | 14.5 | 13.1 | 10.4 | 10.2 | 11.8 | 13.77 |
| 3—4 | 11.8 | 14.1 | 16.4 | 17.5 | 16.2 | 11.6 | 12.9 | 14.4 | 12.0 | 8.7 | 9.5 | 11.9 | 13.08 |
| 4—5 | 10.8 | 12.4 | 15.9 | 17.2 | 15.3 | 10.6 | 12.6 | 13.5 | 10.4 | 7.0 | 7.9 | 11.9 | 12.12 |
| 5—6 | 9.7 | 12.2 | 14.3 | 15.5 | 14.6 | 10.1 | 11.8 | 12.9 | 9.1 | 6.6 | 6.9 | 11.6 | 11.28 |
| 6—7 | 10.4 | 12.6 | 12.5 | 13.7 | 13.8 | 8.5 | 9.7 | 10.8 | 7.6 | 6.5 | 6.9 | 11.7 | 10.39 |
| 7—8 | 9.9 | 12.7 | 11.8 | 11.8 | 12.0 | 7.8 | 8.4 | 9.6 | 6.8 | 6.1 | 7.7 | 11.2 | 9.65 |
| 8—9 | 10.0 | 12.4 | 12.3 | 11.1 | 10.6 | 7.6 | 7.0 | 8.9 | 7.0 | 5.4 | 7.3 | 12.0 | 9.30 |
| 9—10 | 10.5 | 12.5 | 12.3 | 11.2 | 10.2 | 7.7 | 6.3 | 8.9 | 7.6 | 5.9 | 7.8 | 12.0 | 9.41 |
| 10—11 | 9.9 | 12.2 | 11.4 | 9.7 | 9.5 | 7.3 | 5.4 | 7.8 | 7.1 | 5.3 | 6.2 | 11.6 | 8.62 |
| 11—12 | 9.9 | 11.2 | 10.7 | 9.5 | 9.2 | 6.1 | 5.6 | 7.5 | 7.3 | 5.6 | 6.1 | 11.4 | 8.34 |
| 12—13 | 11.3 | 11.0 | 10.6 | 10.2 | 9.4 | 6.1 | 5.8 | 7.8 | 8.0 | 6.4 | 6.6 | 12.2 | 8.78 |
| 13—14 | 10.5 | 10.7 | 9.9 | 10.4 | 9.6 | 5.6 | 5.2 | 7.6 | 7.5 | 6.0 | 6.2 | 11.2 | 8.37 |
| 14—15 | 11.0 | 9.7 | 9.9 | 9.8 | 9.0 | 5.3 | 5.3 | 6.1 | 6.9 | 5.8 | 6.0 | 10.9 | 7.97 |
| 15—16 | 11.8 | 9.7 | 10.6 | 9.5 | 8.5 | 5.1 | 6.4 | 6.7 | 6.9 | 6.5 | 6.6 | 11.8 | 8.34 |
| 16—17 | 11.3 | 9.5 | 10.6 | 10.2 | 8.6 | 5.0 | 5.8 | 6.8 | 7.3 | 5.9 | 6.5 | 11.0 | 8.21 |
| 17—18 | 10.3 | 9.8 | 10.2 | 9.5 | 9.2 | 5.8 | 6.1 | 7.0 | 6.7 | 5.5 | 6.6 | 9.8 | 8.04 |
| 18—19 | 10.7 | 10.0 | 11.4 | 10.4 | 11.1 | 7.5 | 7.8 | 7.7 | 7.1 | 5.5 | 6.8 | 9.1 | 8.75 |
| 19—20 | 10.4 | 9.4 | 11.7 | 13.1 | 12.9 | 8.7 | 9.2 | 9.3 | 8.5 | 5.8 | 6.3 | 10.1 | 9.62 |
| 20—21 | 10.4 | 10.4 | 15.0 | 12.3 | 13.8 | 9.1 | 9.9 | 10.0 | 10.6 | 6.5 | 6.5 | 9.0 | 10.29 |
| 21—22 | 10.6 | 11.8 | 16.6 | 15.5 | 15.0 | 10.3 | 10.8 | 11.3 | 12.1 | 7.3 | 7.1 | 9.5 | 11.49 |
| 22—23 | 13.4 | 12.7 | 17.1 | 16.8 | 15.6 | 10.5 | 11.4 | 12.3 | 12.3 | 8.8 | 8.5 | 10.3 | 12.47 |
| 23—0 | 12.3 | 13.6 | 16.4 | 18.1 | 16.9 | 11.6 | 12.3 | 13.2 | 13.9 | 9.6 | 9.1 | 12.1 | 13.26 |
| Monthly Mean Hourly Velocity. | 11.14 | 11.89 | 13.32 | 13.18 | 12.44 | 8.37 | 8.93 | 10.15 | 9.22 | 6.95 | 7.66 | 11.17 | 10.36 |

MEAN HOURLY VELOCITY OF THE WIND AT THE KEW OBSERVATORY,
FROM OBSERVATIONS MADE IN THE YEAR 1857,

By JOHN WELSH, Esq.

| Hours reckoned from Noon. | Jan. | Feb. | Mar. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Annual Mean Hourly Velo- city. |
|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------------------------------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 0—1 | 13.1 | 13.0 | 16.7 | 13.7 | 14.6 | 16.0 | 13.4 | 11.6 | 10.1 | 11.2 | 9.5 | 12.3 | 12.93 |
| 1—2 | 14.2 | 13.8 | 16.0 | 13.8 | 14.9 | 16.1 | 13.9 | 11.6 | 10.6 | 11.0 | 10.0 | 12.4 | 13.19 |
| 2—3 | 14.1 | 12.6 | 15.6 | 13.1 | 15.1 | 15.6 | 13.7 | 12.0 | 10.9 | 10.5 | 9.4 | 11.1 | 12.81 |
| 3—4 | 12.5 | 11.5 | 15.2 | 14.0 | 15.6 | 16.1 | 14.0 | 11.7 | 10.0 | 9.7 | 7.8 | 10.2 | 12.36 |
| 4—5 | 10.8 | 10.7 | 14.5 | 13.7 | 15.4 | 15.6 | 14.0 | 12.1 | 10.3 | 8.9 | 8.9 | 10.1 | 12.08 |
| 5—6 | 11.6 | 9.7 | 13.2 | 12.8 | 13.1 | 14.6 | 12.6 | 10.3 | 8.2 | 8.0 | 7.7 | 9.9 | 10.97 |
| 6—7 | 11.5 | 7.9 | 12.5 | 9.9 | 11.5 | 13.0 | 11.2 | 8.9 | 6.4 | 8.1 | 6.4 | 9.4 | 9.72 |
| 7—8 | 11.9 | 8.0 | 11.2 | 9.3 | 9.5 | 11.9 | 8.7 | 7.4 | 5.8 | 8.9 | 6.9 | 9.8 | 9.11 |
| 8—9 | 11.7 | 8.2 | 10.7 | 8.4 | 8.2 | 8.7 | 7.2 | 6.1 | 5.5 | 7.9 | 6.3 | 9.1 | 8.17 |
| 9—10 | 12.5 | 7.9 | 10.4 | 8.0 | 7.6 | 8.4 | 6.6 | 5.7 | 5.3 | 7.1 | 6.2 | 8.8 | 7.87 |
| 10—11 | 11.7 | 8.0 | 10.7 | 8.7 | 8.1 | 8.2 | 7.0 | 6.7 | 5.4 | 7.5 | 8.0 | 9.4 | 8.28 |
| 11—12 | 11.3 | 7.4 | 9.6 | 7.1 | 6.7 | 8.0 | 6.3 | 6.2 | 5.2 | 6.2 | 7.6 | 8.0 | 7.47 |
| 12—13 | 12.7 | 7.2 | 10.4 | 7.8 | 6.3 | 7.5 | 6.0 | 6.2 | 5.3 | 6.4 | 7.7 | 8.0 | 7.62 |
| 13—14 | 11.7 | 7.0 | 9.8 | 7.8 | 6.5 | 6.6 | 6.1 | 5.9 | 5.6 | 7.0 | 7.9 | 8.8 | 7.56 |
| 14—15 | 11.7 | 7.1 | 9.2 | 6.8 | 5.8 | 6.1 | 6.2 | 5.9 | 5.4 | 6.3 | 7.5 | 8.3 | 7.19 |
| 15—16 | 11.6 | 7.1 | 8.7 | 6.4 | 5.7 | 6.5 | 6.7 | 5.4 | 5.3 | 6.2 | 8.0 | 8.2 | 7.15 |
| 16—17 | 10.8 | 6.6 | 9.3 | 6.7 | 6.7 | 6.6 | 6.1 | 5.8 | 5.2 | 6.9 | 8.2 | 8.7 | 7.30 |
| 17—18 | 10.2 | 6.0 | 9.2 | 6.8 | 7.2 | 6.7 | 6.6 | 5.7 | 5.1 | 5.8 | 7.9 | 8.4 | 7.13 |
| 18—19 | 10.3 | 6.5 | 9.9 | 7.9 | 8.7 | 9.1 | 7.9 | 6.9 | 5.0 | 6.5 | 7.6 | 8.9 | 7.93 |
| 19—20 | 11.1 | 6.8 | 11.0 | 10.1 | 10.1 | 10.2 | 9.6 | 7.9 | 6.0 | 7.2 | 8.4 | 9.1 | 8.96 |
| 20—21 | 11.4 | 7.1 | 11.7 | 11.8 | 11.5 | 10.9 | 10.5 | 9.0 | 7.0 | 7.6 | 9.1 | 9.4 | 9.75 |
| 21—22 | 11.8 | 8.4 | 13.8 | 12.6 | 11.3 | 12.1 | 11.7 | 10.0 | 8.5 | 8.6 | 8.1 | 9.1 | 10.50 |
| 22—23 | 13.2 | 10.2 | 15.9 | 13.7 | 13.9 | 14.5 | 13.4 | 10.6 | 10.1 | 10.8 | 10.2 | 11.0 | 12.29 |
| 23—0 | 14.9 | 11.3 | 16.3 | 13.5 | 14.3 | 15.1 | 13.0 | 11.2 | 10.2 | 11.1 | 10.1 | 11.7 | 12.72 |
| Monthly Mean Hourly Velocity. | 12.01 | 8.75 | 12.15 | 10.18 | 10.35 | 11.00 | 9.68 | 8.37 | 7.18 | 8.14 | 8.14 | 9.59 | 9.63 |

MEAN HOURLY VELOCITY OF THE WIND AT THE LIVERPOOL OBSERVATORY,
FROM OBSERVATIONS MADE IN THE YEAR 1857,

By JOHN HARTNUP, Esq.

| Hours reckoned from Noon. | Jan. | Feb. | Mar. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Annual Mean Hourly Velo- city. |
|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------------------------------|
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 0—1 | 15.7 | 14.1 | 17.2 | 12.9 | 12.3 | 14.0 | 16.7 | 12.3 | 11.2 | 12.5 | 10.2 | 15.1 | 13.7 |
| 1—2 | 15.5 | 14.4 | 16.7 | 12.8 | 12.0 | 13.9 | 16.9 | 12.7 | 11.5 | 12.7 | 9.9 | 15.0 | 13.7 |
| 2—3 | 15.1 | 14.0 | 17.1 | 12.2 | 11.7 | 13.9 | 16.4 | 12.7 | 11.6 | 12.4 | 9.6 | 14.9 | 13.5 |
| 3—4 | 15.3 | 13.3 | 16.4 | 12.9 | 11.4 | 13.0 | 16.2 | 12.9 | 10.9 | 11.9 | 9.2 | 15.0 | 13.2 |
| 4—5 | 14.5 | 11.6 | 16.1 | 13.2 | 11.4 | 12.5 | 15.3 | 12.2 | 10.4 | 11.4 | 9.2 | 13.4 | 12.6 |
| 5—6 | 14.1 | 11.4 | 15.2 | 13.0 | 10.7 | 11.8 | 14.9 | 11.7 | 9.3 | 11.1 | 8.6 | 13.0 | 12.1 |
| 6—7 | 14.2 | 12.2 | 14.7 | 11.9 | 10.0 | 10.2 | 14.3 | 11.0 | 8.3 | 11.3 | 8.1 | 13.0 | 11.6 |
| 7—8 | 13.8 | 12.3 | 13.8 | 10.4 | 9.6 | 9.7 | 11.7 | 10.3 | 8.3 | 10.9 | 8.1 | 12.0 | 10.9 |
| 8—9 | 14.0 | 12.2 | 12.6 | 9.9 | 9.4 | 9.5 | 10.3 | 10.0 | 7.7 | 11.0 | 8.0 | 11.9 | 10.5 |
| 9—10 | 13.2 | 11.5 | 12.6 | 9.8 | 9.5 | 8.4 | 9.9 | 9.1 | 7.7 | 10.8 | 7.9 | 12.2 | 10.2 |
| 10—11 | 12.1 | 11.4 | 13.1 | 9.5 | 8.9 | 8.6 | 9.0 | 8.7 | 8.0 | 11.2 | 7.8 | 12.8 | 10.0 |
| 11—12 | 11.9 | 11.5 | 13.5 | 8.8 | 8.8 | 9.7 | 10.4 | 8.3 | 7.7 | 11.1 | 7.4 | 13.9 | 10.1 |
| 12—13 | 12.4 | 10.4 | 12.9 | 9.0 | 7.8 | 9.3 | 10.6 | 7.2 | 8.0 | 10.8 | 8.0 | 14.0 | 10.0 |
| 13—14 | 11.7 | 10.5 | 12.6 | 9.7 | 8.1 | 10.0 | 11.3 | 7.0 | 8.2 | 10.6 | 8.0 | 13.8 | 10.1 |
| 14—15 | 11.7 | 11.3 | 11.7 | 9.9 | 8.0 | 9.9 | 11.8 | 7.0 | 8.9 | 10.2 | 8.3 | 13.3 | 10.3 |
| 15—16 | 12.2 | 10.9 | 12.6 | 10.0 | 7.0 | 10.3 | 12.3 | 6.9 | 9.0 | 10.0 | 8.7 | 14.4 | 10.4 |
| 16—17 | 11.7 | 11.1 | 12.9 | 10.5 | 7.1 | 9.5 | 12.2 | 7.3 | 8.9 | 9.3 | 8.4 | 16.0 | 10.6 |
| 17—18 | 12.4 | 11.5 | 12.5 | 10.8 | 6.5 | 9.5 | 12.0 | 7.7 | 8.1 | 10.0 | 8.7 | 14.4 | 10.3 |
| 18—19 | 13.3 | 11.4 | 12.5 | 11.7 | 7.2 | 11.0 | 12.5 | 8.0 | 7.8 | 10.3 | 9.0 | 13.4 | 10.7 |
| 19—20 | 13.8 | 12.3 | 12.9 | 12.5 | 8.1 | 11.7 | 13.4 | 8.7 | 7.9 | 10.0 | 9.4 | 13.1 | 11.2 |
| 20—21 | 13.1 | 12.8 | 14.3 | 13.1 | 8.8 | 12.0 | 13.3 | 9.9 | 8.3 | 10.9 | 9.5 | 13.1 | 11.6 |
| 21—22 | 13.3 | 12.6 | 15.2 | 12.9 | 9.1 | 12.5 | 13.0 | 11.0 | 9.5 | 11.9 | 10.0 | 12.9 | 12.1 |
| 22—23 | 13.9 | 12.8 | 16.4 | 12.6 | 9.9 | 12.2 | 14.3 | 11.4 | 10.8 | 12.1 | 10.0 | 13.3 | 12.5 |
| 23—0 | 14.5 | 13.9 | 18.0 | 12.6 | 11.1 | 13.1 | 15.3 | 11.9 | 10.8 | 12.9 | 10.7 | 14.4 | 13.3 |
| Monthly Mean Hourly Velocity. | 13.1 | 12.1 | 14.4 | 11.3 | 10.1 | 11.1 | 13.2 | 9.8 | 9.1 | 11.2 | 8.9 | 13.7 | 11.5 |



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